



***RM, RT, RS, RO***

# NSF Qualification Standards

# NSF Qualification Standards

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1461 North Road Street  
Elizabeth City, NC 27909

NAME & UNIT:

## RM QUAL SIGN-OFFS

I. RESPONSE MEMBER		DATE COMPLETED	VERIFYING OFFICIAL	
Complete these courses	HAZMAT TECHINICIAN COURSE			
	NSF OIL COURSE			
	NOAA			
Unit required training	ICS 100 <i>correspondence course</i>			
	ICS 200			
	CPR / FIRST AID			
	ADMIN / FINANCE			
	MICP / AUX EQUIPMENT			
	REFERENCE RESOURCE LIBRARY			
	SMALL BOATS			
	SKC PUMPS			
Other	RM TEST			
All qualification requirements for <b>response member</b> have been completed.			Training Officer	Date

NAME & UNIT:

## RT QUAL SIGN-OFFS

II. RESPONSE TECHNICIAN		DATE COMPLETED	VERIFYING OFFICIAL
Complete these courses	Hazmat Tech Specialist (2 weeks)		
	Confined Space Entry Rescue (3 days)		
	Hazmat Safety Officer EPA 165 (3 days)		
	WMD Course (1 week)		
	Full SCAT NOAA (1 week)		
	EPA Sampling (1 week)		
	Oil Spill Response Course (1 week)		
	Unit RCRA course		
	ICS 300 / Division-Group Supervisor		
	DC Vessel Damage Assessment (correspondence course)		
	FEMA RAD (on-line at <a href="http://training.fema.gov/emiweb/is3.htm">http://training.fema.gov/emiweb/is3.htm</a> )		
	FEMA/NFPA Emergency Response to Terrorism (correspondence course)		

NAME & UNIT:

## RT QUAL SIGN-OFFS, continued

II. RESPONSE TECHNICIAN		DATE COMPLETED	VERIFYING OFFICIAL	
Participate in these Drills & Exercises or demonstrate performance during an actual response	Decontamination			
	Plugging & Patching			
	Lightering (Also, state the availability of alternate resources to enhance NSF Lightering operations)			
	Lancer Barge Deployment			
	Sea Slug Deployment			
	IIIOPS			
	III OSS Underway Deployment			
	Dispersant			
	Submersible Pump Team a. Over-the-Top transfer b. In-line transfer c. Pumping chemicals d. Day exercise using chemical scenario e. Day exercise using refined petroleum products oil scenario			
	Non-Submersible Pump			
	Booming			
	WMD			
Other	Satisfactorily developed all required plans in section II.B			
	Satisfactorily demonstrated all required skills section II.C			
All qualification requirements for <b>Response Technician</b> have been completed.			Training Officer	Date

NAME & UNIT:

## RS QUAL SIGN-OFFS

III. RESPONSE SUPERVISOR		DATE COMPLETED	VERIFYING OFFICIAL
Complete these courses	Hazmat Incident Commander (3 days)		
	EPA Health & Safety for Decision Makers 165.8 (2.5 days)		
	Incident Response Planning Workshop		
	OSLTF FFARM (1 day)		
	IIPO (Correspondence course)		
	FEMA – Professionals in Emergency Management (Correspondence course)		
	CG Leadership & Management Course (or other similar course)		
Other	Review a case folder completed by RT		
	Act as a Site Safety Officer at a response		

NAME & UNIT:

## RS QUAL SIGN-OFFS, continued

III. RESPONSE SUPERVISOR		DATE COMPLETED	VERIFYING OFFICIAL	
Lead & evaluate RT in these Drills & Exercises or demonstrate performance during an actual response	Decontamination			
	Plugging & Patching			
	Lightering			
	Lancer Barge Deployment			
	Sea Slug Deployment			
	IIIOPS			
	III OSS Underway Deployment			
	Dispersant			
	Submersible Pump			
	Non-submersible Pump			
	WMD			
Prime Movers & Hydraulic Systems				
All qualification requirements for <b>Response Supervisor</b> have been completed.			Training Officer	Date

NAME & UNIT:

## RO QUAL SIGN-OFFS

II. RESPONSE OFFICER		DATE COMPLETED	VERIFYING OFFICIAL
Complete these courses	Full SCAT NOAA (1 week)		
	Hazmat Safety Officer EPA 165 (3 days)		
	Confined Space Entry Rescue (3 days)		
	WMD Course (1 week)		
	EPA Sampling (4 days Hazmat or Air)		
	Oil Spill Response Course (1 week)		
	EPA Health & Safety for Decision Makers 165.8 (2.5 days)		
	Unit RCRA Course		
	Incident Response Planning Workshop		
	I-300 / Division-Group Supervisor		
	S-420 Command & General Staff (1 week) - <i>optional</i>		
	EPA OSC course (1 week) - <i>optional</i>		
	PIAT Public Affairs Course (1 day)		
	OSLTF FFARM (1 day)		
	IIPO (correspondence course)		
	DC Vessel Damage Assessment (correspondence course)		
	FEMA RAD (online course at <a href="http://training.fema.gov/emiweb/is3.htm">http://training.fema.gov/emiweb/is3.htm</a> )		
	FEMA/NFPA Emergency Response to Terrorism (correspondence course)		
	FEMA Professionals in Emergency Management (correspondence course)		



NAME & UNIT:

## RO QUAL SIGN-OFFS, continued

II. RESPONSE OFFICER		DATE COMPLETED	VERIFYING OFFICIAL	
<b>Participate in these Drills &amp; Exercises or demonstrate performance during an actual response</b>	Decontamination			
	Plugging & Patching			
	Lightering <i>(Also, state the availability of alternate resources to enhance NSF Lightering operations)</i>			
	Lancer Barge Deployment			
	Sea Slug Deployment			
	IIIOPS			
	III OSS Underway Deployment			
	Dispersant			
	Submersible Pump Team <i>f. Over-the-Top transfer g. In-line transfer h. Pumping chemicals i. Day exercise using chemical scenario j. Day exercise using refined petroleum products oil scenario</i>			
	Non-Submersible Pump			
	Booming			
	WMD			
<b>Other</b>	Complete a case folder			
	Spend a week at a MSO: <i>accompany a qualified inspector for inspections on barge, facility, container, port state control, boarding or accident investigation. Any prior "M" qualification waives this requirement.</i>			
	Act as Site Safety Officer on a case			
	Complete a unit tabletop exercise: <i>involving deployment &amp; selection of equipment &amp; personnel</i>			
	Read & discuss NCP & FRP			
	Break-in on 3 cases: <i>2 cases as RM &amp; 1 case as RO</i>			
	Satisfactorily developed all required plans in section III.B			
All qualification requirements for <b>Response Officer</b> have been completed.			Training Officer	Date

## VERIFYING OFFICIALS

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***Appendix A***

## Section

## I

## I. RESPONSE MEMBER

Member must successfully complete the written examination given after each section / week of training. In addition, member must obtain the certificate of course completion for each section / week. This training module meets 29 CFR 1910.120(q)(6)(iii) IAW NFPA 472 Chapter 4 and satisfies the following criteria:

### I.A COURSE OBJECTIVES

#### I.A.1 Hazmat Technician Course

##### Site Safety

Proficient understanding and knowledge of the definitions and acronyms of the following:

EXCLUSION ZONE	EMT	PCB	SOP	CGI
CONTAMINATION REDUCTION ZONE	EPA	PID	TLIII	
SUPPORT ZONE	FID	PPE	SCBA	
IDLH	SOHC	UEL	LEL	

Proficient understanding and knowledge of the safety protocol at a hazardous waste cleanup site including the following:

- Ability to identify safety hazards that may be present
- Procedures to minimize contamination
- What to look for when inspecting drums
- Types of equipment used to safely open drums; 3 types of remote devices
- Special handling procedures for drums that may contain explosives or shock sensitive waste
- Develop a site safety plan
- Elements of a site contingency plan for emergencies
- Minimum elements of site control program
- Importance of establishing site zones
- Importance of using non-sparking, intrinsically safe, explosion proof equipment
- Hand signals used in operating lift equipment and emergency hand signals used during level A/B site entries
- Importance of using 2 methods of communications
- What training / briefing criteria are established for anyone who may come upon a site where pollution response activities are taking place
- The legal requirements for personnel to be on a site and any special provisions

- o. Examples of special case problems (handling of vaults, tanks, drums, etc)

### **Confined Space Entry**

Proficient understanding and knowledge of Confined Space Entry including the following:

- a. Definition of CONFINED SPACE
- b. Safety considerations and physical hazards associated with confined spaces
- c. Equipment utilized to conduct confined space entry
- d. Ability to conduct proper atmospheric testing
- e. Proper ventilation techniques

### **CERCLA & OPA 90: NCP, RCP, ACP**

Proficient understanding and knowledge of the National Contingency Plan (NCP) including the following:

- a. The operational phase of a chemical response and its application to NSF Strike Team activities
- b. The responsibility for worker health and safety
- c. Other Special Forces and their area of expertise

Proficient understanding and knowledge of the On Scene Coordinator (OSC) including the following;

- d. Missions and functions of the OSC
- e. The role of NSF when assisting an OSC in 1) responsible party funded cleanup and 2) government funded cleanup
- f. What do NSF Strike Teams provide to support to the OSC

Proficient understanding and knowledge of CERCLA including the following:

- g. Acronym CERCLA
- h. Identify the criteria to use the CERCLA funds
- i. What is and is not covered under CERCLA

Proficient understanding and knowledge of the Federal Contingency Plan as outlined in 40 CFR 300.210

### **NSF Organization**

Proficient understanding and knowledge of the NSF Organization including the following:

- a. NSF Mission Statement
- b. Area of Operations for each Strike Team
- c. Procedures to request PIAT support
- d. Procedures to request NSF assistance (Marine Safety Manual for an OSC)
- e. Procedures for an OSC and NSF to secure an FPN or CERCLA

### **Plugging and Patching**

Proficient understanding and knowledge of plugging and patching ship's hull including the following:

- a. Application of A, B and C chlorine emergency kits
- b. Damage control kit
- c. Ability to use patching, plugging and vetter kits
- d. Ability to use wedges and plugs
- e. Ability to stop a leak from a pipe using various methods
- f. Limitations of all kits
- g. The chemical compatibility of the different kit materials

**Respiratory Protection**

Proficient understanding and knowledge of respiratory protection including the following:

- a. Checking out, use of, donning/doffing and cleaning SCBA, APR, EEBA
- b. Definition of the following:

ODOR THRESHOLD	VAPOR	GAS
FUME	DUST	MIST
PROTECTION	BREAKTHROUGH	SERIAL LIFE
FACTORS		

- c. The values mandated by law for TLV-TWA, PEL, REL and what standard should be used for a given substance with different established values
- d. The assigned protection factor for SCBA and APR
- e. Given a chemical hazard scenario, determine the proper respiratory selection
  - i. Respiratory decision logic tree and criteria that must be met to use APR
- f. The requirements for a respiratory protection program
- g. The 3 types and function of APR filters
- h. The procedures and parameters for the use of inline air systems
- i. Ability to fill air bottles using air compressors
- j. Ability to complete the Level I manufacturer's maintenance for all breathing systems
- k. The training level requirements for respiratory protection equipment maintenance
- l. The required alarm devices on air compressors used for in-line air supply and filling bottles
- m. Maximum length of air line that can be used with an air line respirator and approved reference
- n. Ability to take an air sample from a compressor for breathing air certification
- o. Parameters for grade D breathing air
- p. Testing and life-span requirements for air bottles
- q. Working knowledge of 29 CFR 1910.120.134

**Direct Reading Instruments**

Proficient understanding and knowledge of direct reading instruments including the following:

- a. Purpose of the following instruments and kits:

DRAEGER PUMP & COLOR METRIC TUBES	SKC PUMPS
DRAEGER CHIP MANAGEMENT SYSTEM (CMS)	INFRARED CAMERA
PH METER	HAZCAT KIT
PH PAPER	MULTI RAE
PCB TEST KIT	AREA RAE
PYROMETER	PDR
WEATHER STATION	
RADIATION SURVEY INSTRUMENTS	

- b. Definition of the following:

PHOTOIONIZATION DETECTOR (PID)	RELATIVE RESPONSE
FLAME IONIZATION DETECTOR (FID)	TEST SOURCE
FLAMEOUT	ALPHA
ORGANIC / INORGANIC	
BETA	
GAMMA	

## CALIBRATION GAS PH

- c. Identify which instruments are intrinsically safe
- d. The decision logic to select a FID or PID for a known chemical

**TVA-1000**

Proficient ability and knowledge of TIIIA-1000 including the following:

- a. Understand parts and function
- b. Ability to set up, calibrate and operate
- c. Charging internal batteries
- e. How the PID and FID functions
- f. Ability to refill hydrogen bottles
- d. NSF SOP action levels
- e. Cleaning the ionization chamber and changing the photoionization lamp
- f. Different lamps used and when to use
- g. Things that will interfere or inhibit the TIIIA -1000 and FID operation
- h. Alternative supplies for cal gas during remote deployment

**PHD Ultra**

Proficient understanding and knowledge of PHD Ultra including the following:

- a. Parts and function
- b. Setup, calibrate, operate
- c. Sensor replacement
- d. Cross sensitivity of the sensors
- e. Charging or replacing battery
- f. NSF SOP action levels
- g. The compounds which "poison" the combustible gas sensor
- h. Impact of corrosive atmospheres

**Multi-Rae / Area Rae**

Proficient understanding and knowledge of Multi-Rae / Area-Rae including the following:

- i. Parts and function
- j. Setup, calibrate, operate
- k. Sensor replacement
- l. Cross sensitivity of the sensors
- m. Charging or replacing battery
- n. NSF SOP action levels
- o. The compounds which "poison" the combustible gas sensor
- p. Impact of corrosive atmospheres

**Radiation Survey Instruments**

Proficient understanding and knowledge of radiation survey instruments including the following:

- a. Parts and functions
- b. Set up and operate including a source check
- c. Change power supply
- d. Types of radiation detected
- e. What can interfere with operation
- f. Difference between COUNT METER and DOSE METER
- g. Difference between DOSE RATE METER and TOTAL DOSE
- h. NSF SOP action levels
- i. Conduct a radiation survey



**Pyrometer (infrared Thermometer)**

Proficient understanding and knowledge of the pyrometer including the following:

- a. Parts and function
- b. Proper operation
- c. What can interfere with its operation and what can permanently damage the instrument
- d. Charging and changing the power supply

**pH Paper**

Proficient understanding and knowledge of pH paper including the following:

- a. pH range; pH of acids and bases
- b. Understand how the pH paper works and its limitations
- c. Find the pH of a liquid, solid, gas / Vapor

**PCB Test Kit**

Proficient understanding and ability to conduct a PCB test using both the liquid and soil test kits.

**Draeger Pump and Colorimetric Tubes**

Proficient understanding and knowledge of draeger pump and tubes including the following:

- a. Parts and functions
- b. Limitations and considerations of the draeger tube system
- c. Ability to conduct a leak test a draeger pump
- d. Ability to conduct a test using the pump and tubes
- e. Proper disposal of tubes

**Draeger CMS**

Proficient understanding and knowledge of draeger CMS including the following:

- a. Parts and function
- b. Change batteries
- c. Ability to take a sample
- d. The availability of draeger CMS chips limited selection
- e. Ability to locate cross sensitivity

**HAZCAT Kit**

Proficient understanding and knowledge of the HAZCAT kit including the following:

- a. General safety procedures and the special safety considerations of conducting hazardous classification on an unknown substance
- b. Be knowledgeable with the section in the reference which will be most often used to categorize an unknown solid or liquid

**Infrared Camera**

Proficient understanding and ability to set up and operate the infrared camera.

**WBGT – Heat Stress Monitor**

Proficient understanding and ability to set up and operate the WBGT and evaluate data IAW ACGIH heat / cold stress guidelines; ability to establish a work / rest regimen IAW fatigue guidelines.

**Personal Protective Equipment (PPE) / Levels of Entry**

Proficient understanding and knowledge of PPE and levels of entry including the following:

- a. Ability to don / doff levels A, B, C and D of chemical protective clothing
- b. Ability to select proper level of PPE for given scenarios
- c. Understand and reference OSHA requirements for PPE for the following: GENERAL, EYES / FACE, NOISE EXPOSURE, RESPIRATORY, HEAD, FOOT, ELECTRICAL PROTECTIVE DEVICES.
- d. Three factors which effect the performance of chemical protective clothing
- e. The minimum level of protection required by the CHEM SOP for initial entry if the preliminary site evaluation does not produce sufficient information to identify the hazards or suspected hazards of the site
- f. Elements required in a written PPE program
- g. Person responsible to ensure appropriate level of PPE is used at a response site
- h. Training requirements for the use of PPE

**Sampling**

Proficient understanding and knowledge of sampling including the following:

- a. Reasons for taking samples
- b. Sampling equipment in NSF inventory
- c. Various methods of packing samples
- d. Chain of custody
- e. Grab-sample and integrated-sample

**Decontamination Procedures**

Proficient understanding and knowledge of decontamination procedures including the following:

- a. Health and safety considerations
- b. Logistics, equipment and staffing considerations for emergency decon site and heavy equipment decon site
- c. Three basic methods
- d. Required procedures for a given contaminant
- e. Person responsible for monitoring decontamination operations
- f. Ability to set up and remove a decon line; communicate procedures to employees
- g. PPE level for decon workers; which level is not acceptable & why
- h. Ability to participate as decon team member; decon team leader
- i. Factors required to downgrade PPE level for decon workers
- j. The implications with hooking up to a public water source for decon
- k. Considerations for waste storage and disposal

**HazMat Chemistry**

Proficient understanding and knowledge of the following:

- a. Definition of the following:
 

SPECIFIC GRAVITY	CAUSTIC	IONIZATION
		POTENTIAL
VAPOR PRESSURE	BASIC	CARCINOGEN

ENDOTHERMIC	ACIDIC	TERATOGEN
EXOTHERMIC	FLASH POINT	MUTAGEN
EXPLOSION LIMIT (UEL/LEL)	AUTO-IGNITION TEMP	FLAMMABLE
EXPLOSION	COMPRESSED GAS	REACTIVITY
OXIDATION	TOXICITY	CRYOGENIC
ORGANIC	POLYMERIZE	PYROPHORIC
RADIATION	ALPHA/BETA/GAMMA RADIATION	
IONIZING RADIATION	NON-IONIZING RADIATION	

- b. Warning placards and labels
- c. Be familiar with the colors used in the NFPA 704 identification system and what they represent
- d. Three forms of matter
- e. Define AMBIENT AIR and list the components and percentages
- f. Three ways to protect against radiation exposure
- g. Department of Transportation categories and classification of hazardous materials
- h. The neutralization process; advantages and disadvantages
- i. Importance of titration and ability to monitor pH changes

#### **Air Monitoring / Surveillance**

Proficient understanding and knowledge of air monitoring and Surveillance including the following:

- a. Definitions of the following:

PERMISSIBLE EXPOSURE LIMITS (PEL)  
RECOMMENDED EXPOSURE LIMITS (REL)  
THRESHOLD LIMIT VALUES (TLV)

- b. Which agencies (ACGIH, NIOSH, OSHA) sets which limits (PEL, REL, TLV)
- c. What conditions an initial air survey should test for
- d. Significance of RELATIVE RESPONSE
- e. NSF action levels for entering hazardous environments
- f. Interferences that may affect the assessment of airborne contaminants
- g. Areas on and off site that should be monitored regularly
- h. Difference between passive and active air monitoring instruments; advantages and disadvantages

#### **Medical Monitoring**

Proficient understanding and knowledge of medical monitoring including the following:

- a. Who is required to be enrolled in a medical surveillance program
- b. The temperature at which heat stress should be implemented for personnel wearing semi-permeable or impermeable protective clothing
- c. Methods of heat stress monitoring of personnel
- d. Required form to be filled out if there is a potential exposure to personnel
- e. Preventive measures for heat stress in order to avert serious illness and loss of work productivity

Procedures to ensure all response personnel are properly monitored for heat stress, cold stress, and chemical exposure

**I.A.2 NSF Oil Course****CERCLA & OPA 90: NCP, RCP, ACP**

Proficient understanding and knowledge of the National Contingency Plan (NCP) including the following:

- a. The 4 operational phases of oil spill response
- b. The Volume (in gallons) of minor, medium and major spills, both coastal and inland standards
- c. The function of RRT
- d. Definitions of the following:

COASTAL WATERS	DISCHARGE	INLAND WATERS
COASTAL ZONE	FACILITY	INLAND ZONE
CONTIGUOUS ZONE	HAZARDOUS SUBSTANCE	RELEASE

Proficient understanding and knowledge of OPA 90 including the following:

- e. Definitions of NATURAL RESOURCES, REMOIIIAL COSTS and RESPONSIBLE PARTY
- f. How OPA 90 relates to Federal Employee Liability

Proficient understanding and knowledge of the functions of Federal Trustees, State Trustees, Indian Trustees, and Foreign Trustees

Proficient understanding of what is and is not covered under OSLTF

**Communications Equipment**

Proficient knowledge and ability to operate the various portable radios located at unit (vehicles, boats, handheld, Incident Response Center, MICP, SCBA units) including the following:

- a. Identify all parts and functions of radios and accessories
- b. Safety precautions associated with operating IIIHF and UHF band radios
- c. Ability to set up and operate a Base Station radio with both 115/230 vac (if available) and 13.8 vdc supplies
- d. Ability to operate unit's cell and INMARSAT phones
- e. Use of proper radio telephone procedures IAW Telecommunications Handbook COMDTINST 2300.7
- f. Ability to set up a repeater and locate an optimal repeater site
- g. Ability to transmit documents, data and pictures via internet from the field

**Submersible Pumps**

Proficient knowledge and ability to operate submersible pumps including the following:

- a. Maximum rated lift and viscosity in centistokes
- b. Maximum hydraulic flow rate and working pressure
- c. Procedures for using submersible pumps with chemical hydraulic hose
- d. Working pressure for stainless steel hydraulic lines IAW manufacture's specification
- e. Types of product that are compatible with submersible pumps
- f. Maximum discharge rate and factors that affect the rate
- g. Ability to configure submersible pump for transfer of chemicals

**Non-Submersible Pumps**

Proficient knowledge and ability to operate non-submersible pumps including the following:

- a. Type of prime movers needed for each pump
- b. All parts and functions
- c. Support equipment
- d. Safety considerations for operating/refueling an internal combustion engine driven pump
- e. Definition of SUCTION LIFT, DISCHARGE HEAD and TOTAL HEAD
- f. The rated lift for each pump
- g. The various reasons for suction failure in the centrifugal pump
- h. Capabilities and limitations of pumps (i.e. chemical compatibility, solids, flammables, GPM, max air psi on Wildens)
- i. Reference source for the chemical compatibility for the Wildens and Peristaltic internal pump parts.
- j. Consideration taken to select and operate pumps

**Prime Movers and Hydraulic Systems**

Proficient understanding and knowledge of prime movers and hydraulic systems including the following:

- a. The parts and functions of each type of prime mover
- b. Safety precautions
- c. Ability to set up, operate and shut down (normal and emergency) each type of prime mover (Deutz, HIIIPU, Inflatable boom prime mover, Fast Sweep boom prime mover)
- d. Importance and purpose of the CASE DRAIN
- e. Options for cooling hydraulic system
- f. Weights of each type of prime mover
- g. Ability to safely relieve the hydraulic pressure on a disconnected hydraulic hose
- h. YANMAR prime mover
  - i. Frequency of checking fluid levels
  - ii. Recommended warm up and cool down periods
  - iii. The position the throttle is set at when deploying the boom
  - iv. The speed control knob and its operations

**Plugging and Patching**

Proficient understanding and knowledge of plugging and patching ship's hull including the following:

- a. The preferred patch placement when pumping or blowing ship space
- b. The 3 different methods to fasten a patch to the hull externally
- c. What outside assistance may be used to apply underwater plugs or patches
- d. Complete the NSF Shipboard Damage Assessment Check Off Sheet
- e. Properly use the Dangerous Cargo Manifest in conjunction with 49 CFR Sub Chapter 172 and 176

**Vessel Damage Assessment**

Proficient understanding and ability to properly use the Dangerous Cargo Manifest in conjunction with 49 CFR Sub Chapter 172 and 176

Proficient understanding and knowledge of Vessel damage assessment including the following:

- a. Damage assessment kit

- b. Ability to operate the MMC Tri-mode portable temperature, ullage and oil water interface tape
- c. Definition of the following:

LENGTH ON A DESIGN LOAD WATERLINE	FREEING FORCES
SEGREGATED BALLAST TANK	FLOODING WATER
CLEAN BALLAST TANK	SOLID FLOODING
RESERVE BUOYANCY	PARTIAL FLOODING
TOTAL DISPLACEMENT	LOOSE WATER
DISPLACEMENT	FREE SURFACE
TRIM	LENGTH OVERALL
BUOYANCY	PLIMSOLL MARK
RIGHTING MOMENT	WATER BOTTOM
TONNAGE	MOMENTS
HEEL	LIST
DPI	

- d. Ability to take soundings with the sounding tape / oil water interface detector
- e. The difference between ULLAGE and INNAGE
- f. The 2 principles method of draft markings
- g. Ability to take draft readings of a commercial Vessel
- h. What a Marine Chemist Certificate is and what activities it authorizes

### **Salvage**

Proficient understanding and knowledge of the following:

- a. Ability to rig chafing gear
- b. Safety precautions and warning signs involved with removing the Butterworth and other tank coverings/fittings from a Vessel
- c. Methods to free a tank of gas
- d. The effects of mud, sand, coral and gravel bottoms have on the freeing force of a grounded Vessel
- e. Given product and weight to be lightered, determine the amount of product to be removed in gallons
- f. Ability to determine if a grounded Vessel has shifted position
- g. The final approval authority for a salvage plan
- h. Other resources available to assist in evaluation of or drafting salvage plans
- i. Definition of the following as they apply to a grounded Vessel

HOLED	SAGGING
HARD AGROUND	OPEN TO THE SEA
STRANDED	GROUNDING REACTION
HOGGING	FREEING FORCE

### **Lightering**

Proficient understanding and knowledge of lightering including the following:

- a. Definition of LIGHTERING
- b. The purpose, elements and approving authority of a Lightering Plan
- c. The difference between BONDING and GROUNDING
- d. The accumulation of static electricity in transfer equipment from pumping fluids
- e. Ability to ground/bond the prime mover, hoses, submersible pump and tripod
- f. Ability to rig a Vapor reduction device
- g. Meaning of the term OILER THE TOP
- h. Ability to draw a diagram of an OILER THE TOP operation

- i. The required emergency shutdown procedures
- j. Location and purpose of flame screens on a Vessel
- k. Importance of conducting air monitoring of fuel tanks on Vessels
- l. The use of inert gas systems and how to insert
- m. Importance of foam blankets used in suppressing Volatile Vapors
- n. Definition of POOR MAN'S HOT TAP and SALVAGE HOT TAP
- o. The considerations when monitoring a non-Strike Team lightering operation
- p. The contents of the Declaration of Inspection
- q. The requirements for the use of vapor reduction device
- r. Safety precautions for lightering in extreme weather conditions

### **Rigging**

Proficient knowledge and ability to safely conduct rigging operations including the following:

- a. Safety precautions for rigging operations
- b. Safety precautions for working with lines under STRAIN, with a BIGHT, a RUNNING line, WIRE ROPE
- c. The operating parameters of each equipment and ability to properly operate each item:

#### **10K & 25K AIRCRAFT CHAIN AND SECURING DEVICES**

WIRE ROPE SNATCH BLOCKS	TURNBUCKLES	LUGALLS
GRIPHOISTS	WIRE ROPE CLIPS	A-FRAME HEADS
BEAM CLAMPS	CARGO NETS	PADEYES
SWIVELS	AIRCRAFT STRAPS	BOLLARDS
SHACKLES	BRIDLES	SEIZING WIRE
WIRE STRAPS	THIMBLES	SIDE NETS
LIFTING SLINGS	HOSE SADDLES	CLEATS
MARLINSPIKE	TOPS NETS	DOUBLE BLOCKS
TRIPODS	HOOKS	

- a. Ability to mouse or seize a hook
- b. Ability to stage a tripod for use in the following conditions:
  - i. Suspending a load
  - ii. On a deck with a significant list
  - iii. On muddy or damp ground
  - iv. With the legs extended
- c. Ability to stage an A-frame and tripod for raising and lowering a load
- d. Maximum lift for the A-frame
- e. The maximum capacity for the Lug-All, griphoist and super pull-all when RAISING / LOWERING a load and FREE RUNNING the wire rope
- f. The overload protection device on the griphoist
- g. Safety requirements for lifting personnel
  - i. Ability to inspect and don a personal safety harness
  - ii. Ability to monitor personnel being lifted
- h. Ability to rig a 4:1 purchase using block and tackle
- i. Ability to set up slings and bridles using proper leg lengths and leg angle for lifting and towing

### **Lancer Inflatable Barge B-100**

Proficient knowledge of parts and functions and ability to deploy a Lancer Inflatable Barge including the following:

- a. Specifications – PHYSICAL DIMENSIONS when fully inflated, DRAFT when fully laden, normal and maximum FILL LEVELS

- b. Unpacking the barge
  - i. Preferred method
  - ii. Preparation of the ground prior to barge assembly
- c. Proper inflation procedure
  - i. What to do if the air vents freely from the inlet valve
  - ii. Emergency pressure relief valves
  - iii. Securing the roof and anti-spill flap - understand why the roof should be drawn evenly and tightly around the perimeter
  - iv. Connecting the lifting arrangement, towing bridle
  - v. Connecting the decanting hose and its required rigging
  - vi. Purpose of void attachment points
  - vii. Installation of navigation lights
  - viii. Rigging the fill hose to the barge
- d. Towing
  - i. Vessel horsepower requirements for a fully laden barge
  - ii. Special concerns for towing alongside a twin screw Vessel
  - iii. Maneuvering limitations of barge
  - iv. Maximum tow speeds
  - v. Special precautions / actions if the bow compartment gets deflated or a buoyancy compartment is ruptured
  - vi. Procedures for mooring the barge alongside a wharf and acceptable sea conditions
- e. Repacking the barge
  - i. Deflation
  - ii. Preferred method
  - iii. Placement of cargo net
- f. The logistical requirements and considerations for deployment and decontamination of the barge

#### **Canflex FCB-100 Sea Slug**

Proficient knowledge of parts and functions and ability to deploy a Sea Slug including the following:

- a. Specifications – dimensions, capacity, draft, Canflex chemical resistance guide
- b. Safety considerations
- c. Method for deploying and recovering
  - i. Lifting procedures
  - ii. Connecting the navigation light
  - iii. The various fill connections and the importance of leaving one of the ball valves open during filling
  - iv. Towing procedures and importance of the Sea Drogue
- d. Decanting procedures
  - i. Various methods of off-loading
  - ii. Connecting the Dracone off-loading adaptor system and Dracone off-loading system to the sea slug
- e. The logistical requirements and considerations for the deployment and decontamination of the sea slug

#### **Illiscous Oil Pumping System (IIIOPS)**

Proficient understanding and knowledge of the viscous Oil Pumping System including the following:

- a. Parts and functions of each component
- b. System capabilities and limitations
- c. Ability to assemble the components
- d. Operate the IIIOPS and pump oil



- e. Identify when it is necessary to use the IIIOPS
- f. Draw a diagram of the IIIOPS concept

### **Vessel of Opportunity Skimming System (III OSS)**

Proficient knowledge and ability to participate in the deployment of the III OSS including the following:

- a. Specifications: total weight and dimensions of the III OSS container
- b. Vessel specifications:
  - i. Recommended minimum and maximum Vessel length required
  - ii. Maximum Vessel speed with III OSS deployed
  - iii. Vessel movement and positioning considerations during and after equipment is deployed
  - iv. What to do if the weak link breaks
- c. Recommended number of operators required
- d. Logistical support requirements for a deployment and recovery
- e. Parts and functions of all components and how they fit into the III OSS configuration
- f. Ability to assemble and install the following:
  - i. U-Joint Clamp
  - ii. Outrigger and rigging (forward preventer w/weak link, gliding line, distance rope, skimmer handling lines)
  - iii. Lifting davit
  - iv. Boom
- g. Outriggers
  - i. Placement relative to Vessel
  - ii. Importance of min / max angle between the outrigger arm and the forward preventer line / aft gliding line
  - iii. "In transit" position

### **Fast Sweep Boom**

Proficient knowledge and ability to participate in the Fast Sweep Boom deployment including the following:

- a. Specifications: design characteristics, dimensions, weight w/reel
- b. Logistical requirements for loading / off-loading the boom reels
- c. Deck arrangement considerations of the boom reel and securing to the deck
- d. Safety and operational considerations (i.e. net)
- e. What side of the Vessel the boom is deployed / retrieved and why
- f. Yanmar prime mover and its purpose
  - i. Parts, functions, required connections
  - ii. Throttle position for deployment
- g. Boom inflation and deflation procedures
- h. Methods for removing debris from the apex

### **Screw-Augur Weir Skimmers**

Proficient knowledge and ability to operate the DESMT-250 skimmer and successfully run skimming operations including the following:

- a. Recommended minimum oil layer to operate skimmer without the light oil adaptor
- b. Conditions that can influence the recovery rate
- c. Maximum hydraulic flow rate and pressure
- d. Recommended solvent for cleaning skimmer
- e. Adjusting the floats; float position when using the EASY-FLOW 250 Floating Weir Lip
- f. Advantages of the Archimedes screw pump

- g. Purpose of the case drain
- h. Safety precautions
- i. Ability to connect all hydraulic hoses and in every configuration
- j. Parts and function of skimmer and control stand
- k. Procedure for removing debris from skimmer
- l. Procedure for operating both control stands in the event of failure of either control stand air compressor
- m. Procedures to operate skimmer when recovering heavy oil and the Light Oil adaptor does not function properly
- n. Troubleshooting and recommended action for the following:
  - i. Running but will not pump high viscosity media
  - ii. Making banging noises
  - iii. Will not pump debris
  - iv. Vertical adjustment of weir lip does not work
  - v. "Jumps" out of the water
  - vi. Oil will not flow into the hopper
- o. Alternative uses for the skimmer
- p. Necessary actions prior to operating to recover highly Volatile (class B) liquids
- q. Determining factors for optimum skimming operations

#### **Inflatable Boom**

Proficient knowledge and ability to deploy the inflatable boom including the following:

- a. Connecting hydraulic hoses
- b. Parts and function; operation
  - i. Anchor points
  - ii. Air bladder check valves
  - iii. Boom sleeve deflation valves
  - iv. Speed control knob
  - v. Manual break
- c. Inflate / deflate boom
- d. Deploy / retrieve boom; rolling up boom on reel
- e. Positioning / navigation of the Vessel during boom retrieval
- f. Positioning of reel on deck; secure to deck
- g. Maximum Vessel speed and sea conditions for towing the boom in transit position and "U" configuration
- h. Maximum tow length of boom
- i. Recommended size and type of tow line; location of weak link
- j. Requirements for cleaning the boom and its support equipment after each use
- k. Logistical requirements (shore side and Vessel) for the boom reel

#### **Boom Mooring System**

Proficient knowledge and ability to set up the boom mooring system including the following:

- a. Procedure for setting up boom mooring system
- b. Maximum holding capacity for the anchoring system
- c. Basic containment boom setup for light currents; heavy currents
- d. Logistical requirements

#### **Booming**

Proficient understanding and knowledge of oil containment booms including the following:

- a. The five parts of boom
- b. Seven factors to be considered prior to deployment
- c. Five basic reasons for boom failure; procedures to avoid each
- d. Conditions for using CASCADE, EXCLUSION, SORBENT, and COLLECTION booming
- e. Be familiar with the decision guide in Exxon's Oil Spill Response Field Manual, chapters 5 & 6
- f. Under what circumstances booming should not be done
- g. General requirements for deploying and anchoring booms maintained in the NSF inventory

### **Foam Filled Boom**

Proficient knowledge and ability to deploy foam filled booms including the following:

- a. Prepositioned locations of foam filled boom in your AOR
- b. Review video on foam filled boom
- c. Dimensions
- d. Length of boom stored in each box
- e. Proper deployment sequence (from box)
- f. Considerations for repackaging
- g. Maximum tension load of the weak link on the towing bridle
- h. Maximum Vessel speed and length of boom for straight line tow; "U" configuration tow; safety concerns (towing bit)
- i. Anchoring procedures; anchoring points
- j. Logistics of deployment

### **Mechanical Recovery**

Proficient understanding and knowledge of mechanical recovery including the following:

- a. Definition and principles of the following:

API GRAVITY	VISCOSITY	QUANTITY OF OIL IN A BARREL
POUR POINT	ADSORBENT	AROMATIC HYDROCARBON
OLEOPHILIC	ABSORBENT	RECOVERY EFFICIENCY
OIL SPREADING	OIL EVAPORATION	OIL RECOVERY RATE
DISPERSION	EMULSIFICATION	
BIODEGRADATION	SEDIMENTATION	

- b. Familiarity with the operating principles of the following types of skimmers:

SUCTION	DISC	ROTARY
WEIR	DRUM	BRUSH
ROPE MOP	BELT	SUBMERSION PLANE

- c. The operating principles of a gravity oil / water separator
- d. The 3 broad classifications of spilled oil and the types of skimmers that are most effective with that type of oil
- e. Oil type and its properties (physical, chemical, toxicological and spill behavior)

### **Damming / Diking / Diverting**

Proficient knowledge and ability to apply a dam, dike, or divert oil including the following:

- a. Ability to construct the following:
  - i. An underflow dam with the correct size and number of pipes for the stream flow
  - ii. An overflow dam
  - iii. A diversion berm
  - iv. A containment berm
  - v. A sorbent / debris fence
- b. How the specific gravity of a product would determine the type of dam to construct
- c. General geographical locations where each type of dam would be most practical
- d. Alternative uses of diversion beams
- e. The difference between a partial underflow dam and an underflow dam and when it would be used
- f. The primary reason for determining whether to use a one-sided or two-sided debris/fence barrier

#### **Aircraft Load out**

Proficient understanding and knowledge of aircraft load outs including the following:

- a. Aircraft safety procedures
- b. Responsibilities of the Load Master
- c. Use of milk stool
- d. Standardized aircraft pallets
- e. Utilizing cargo nets (when and how)
- f. Pallet build up; height and weight restrictions
- g. Weight restrictions on chains and tie down straps
- h. Weighing and marking of pallets
- i. Duties of safety officer during a load out
- j. Compartment dimensions for C-130 and C-5
- k. Rated weight capacity and limitations of cargo ramp

#### **Weather Stations**

Proficient understanding and knowledge of weather stations including the following:

- a. Set up and operate
- b. Ability to calculate plume projections for a given scenario using weather station and ALOHA
- c. Ability to download and interpret weather data using software

### **I.A.3 NOAA**

#### **Shoreline Assessment / Cleanup**

Proficient understanding and knowledge of shoreline assessment and cleanup including the following:

- a. Complete shoreline assessment sheet for a given scenario
- b. Definition of SCAT
- c. Primary reference for shoreline assessment and cleanup
- d. Seven shoreline types
- e. Ten cleanup techniques; environmental impact

- f. Tool necessary to conduct assessment
- g. Complete NOAA Shoreline Survey Evaluation Form and Short Form
- h. NOAA matrix
- i. Five reason for completing a repetitive, detailed, and systematic survey of shoreline impacts
- j. Reasons for conducting ground surveys
- k. General guidelines used in selecting and naming shoreline segments
- l. Special considerations for conducting assessment/cleanup
- m. General composition of an assessment team
- n. Predicted oil impact of the shorelines
- o. Best management practices

### **In-Situ Burning**

Proficient knowledge and understanding of In-Situ Burning including the following:

- a. Define IN-SITU BURNING
- b. Physical characteristics of the fire boom
- c. Minimum range of thickness for oil to be burned
- d. Operate the Data Ram
- e. Weight and configuration of the In-Situ Burn kit
- f. Two methods for igniting floating oil
- g. How the emulsification of oil affects the efficiency of the burn
- h. Three general groups of by-products of an In-Situ Burn
- i. Three physical factors affecting controlled burning of oil
- j. Complete the monitor log and form, burn checklist
- k. In-Situ Burn guidelines
- l. SMART protocol
- m. The agency stakeholders and available resources to staff an In-Situ Burn taskforce
- n. Diagram of equipment deployed in an In-Situ Burn taskforce
- o. Set up and deploy an In-Situ Burn team for an exercise
- p. Local Area Contingency Plans in regards to In-Situ Burn

### **Aerial Observation**

Proficient knowledge and understanding of aerial observation including the following:

- a. Meet the requirements of COMDTINST 3700.1 FLIGHT SAFETY FOR NON-AIRCREW COAST GUARD PERSONNEL
- b. Determining position from the air
- c. Some natural materials or events commonly mistaken for oil from the air
- d. Tools to determine the amount of oil on the water
- e. The optimum height(s) for observing oil spills utilizing both non-mechanical and mechanical devices
- f. Determining oil slick movement with reference point, wind and currents info
- g. Directing surface Vessels to location of surface oil
- h. Draft a communications plan for aerial to surface operations with multi-agency equipment

### **Chemical Countermeasures**

Proficient understanding and knowledge of chemical countermeasures including the following:

- a. Be familiar with the chemical countermeasures listed in subpart J of the National Contingency Plan

- b. Define HERDING AGENT, EMULSION AGENT, SOLIDIFYING AGENT, SHORELINE PRE -TREATMENT AGENT
- c. Oil dispersants and how they work
- d. The authority to authorize the use of dispersants
- e. Fluorometer: ability to set up, operate, collect data and transmit information
- f. Data Ram: ability to set up, operate, collect data and transmit information
- g. Weight and configuration of the standard dispersant kit
- h. Methods of applying dispersants to an oil spill
- i. The problems that can occur when using an elastic modifier in conjunction with a centrifugal pump
- j. Three conditions that determine the effectiveness of dispersants
- k. Benefits / Objectives of chemically dispersing oil
- l. Considerations that are essential in planning dispersant use on major spills
- m. Methods (including remote sensing methods) that may be useful for accurate dispersant applications
- n. Local Area Contingency Plans in regards to dispersant use
- o. Perform as an aerial observer
- p. The difference between the three tiers of the dispersant module of the SMART manual

### **Bioremediation**

Proficient understanding and knowledge of bioremediation including the following;

- a. The difference between BIODEGRADATION and BIOREMEDIATION
- b. Define the following in relation to bioremediation:

FERTILIZATION  
SEEDING  
BACTERIA  
OLEOPHILIC  
AEROBIC BACTERIA

ANAEROBIC BACTERIA  
ALIPHATIC COMPOUNDS  
SURFACTANT  
ENZYME

- c. Approving authority
- d. Application of bioremediation

## I.B UNIT REQUIRED TRAINING

Member must successfully complete any written or practical examination given in this training block. In addition, member must obtain all relevant certificates of course completion or a passing score on any correspondence course.

### ***I.B.1 ICS 100 – correspondence course***

This training meets 29 CFR 1910.120(q)(3)(I)

### ***I.B.2 ICS 200***

This training meets 29 CFR 1910.120(q)(3)(I)

### ***I.B.3 First Aid / CPR***

This training meets 29 CFR 1910.120

### ***I.B.4 Admin / Finance***

This training meets NPFC User Reference Guide and Federal Acquisition Regulations

#### **Small Purchase Procedures**

Proficient understanding and knowledge of who approves purchases under an OSLTF or CERCLA funded response and how to procure a small purchase with site funds.

#### **BOA's**

Understand who is responsible for completing Form CG-5136 / E-1 thru 4.

#### **Sources of Supply**

Proficient understanding and knowledge of the following:

- a. The advantages to leasing over buying equipment on a site
- b. Who must track all property at a site
- c. What items are prohibited from purchase

#### **Resource Documentation**

Proficient knowledge and ability to complete a Pollution Incident Daily Response Report Government Summary Sheet (CG-5136E)

#### **Travel and Transportation**

Proficient knowledge and ability to arrange and resolve travel and transportation issues, including the following:

- a. Locating the per diem rate
- b. Arranging transportation for supplies / equipment
- c. Complete a travel claim

### ***I.B.5 MICP / AUX Equipment***

This training supports activities under the National Contingency Plan, 40 CFR 300

### **Mobile Incident Command Post**

Proficient understanding and knowledge of the MICP including the following:

- a. Operational capability
- b. Electrical and other auxiliary requirements
- c. Personnel / equipment requirements
- d. Ability to complex / secure for road / tear down for short & long term deployments

### **Auxiliary Electrical Equipment**

Proficient understanding and knowledge of Auxiliary Electrical Equipment including the following:

- a. Location of all generators
- b. Operating parameters and basic trouble shooting of generators
- c. Ability to operate (start, run, shutdown, emergency shutdown, load/cable connections, fuel) generators
- d. Proper procedures for changing the light bulb of floodlights / lighting pallet

## ***I.B.6 Reference Resource Library***

This training supports 29 CFR 1910.120(q)(6)(iii)

Proficient understanding and knowledge of all unit's reference resource library including the following:

- a. Sources for potential reactivity of hazardous materials
- b. Describe the type of information to be found in the CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM COMDTINST M16465.11B and how to reference a chemical by synonym
- c. Identify the primary field reference source in which ionization potentials may be located
- d. Identify the primary reference source for field identification of DOT numbered cargos and explain the two ways to research materials using this guide; describe the types of information found in it
- e. Identify the exposure guideline sourcebook published by the American Conference of Government Industrial Hygienists and describe the types of information in it
- f. State the necessary information from a compressed gas bottle for positive identification of its contents
- g. Identify the title of the primary reference source for railroad tank car information and describe the three main types of information found in it
- h. Identify the title of the first reference text to be consulted during a response if a pesticide were to be discovered on site; describe the two major commodity types covered by this reference source
- i. Describe the method used to research a chemical in the Sax/Lewis DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS text set
- j. Name the three of the major databases within the TOMES system and describe the type of information contained in each
- k. Using the TOMES database, search for a chemical by the following:

CHEMICAL NAME  
CAS NUMBER  
NA NUMBER

RCRA NUMBER  
RTECS(R) NUMBER  
STCC NUMBER

UN NUMBER



- I. Using the CAMEO database, perform the following:
  - i. Use code breaker to identify a chemical
  - ii. Use RIDS to identify response standards and recommend protective clothing for a chemical
  - iii. Use ALOHA to project a chemical air plume from a 10'x10' pool in still air conditions
- m. Given four chemicals by an RS, identify a reference source for the following:
  - i. The recommended evacuation distance for an emergency, if appropriate; if not explain why
  - ii. Describe its correct placarding requirement if transported as a commodity or as hazardous waste
  - iii. Complete a Hazardous Substance Information Sheet (NSF Field Guidebook #3) for each substance
- n. Define the different incident levels for hazardous materials incidents used in the NFPA standards; explain the level at which strike teams could normally be expected to be involved in an incident
- o. Given a scenario from your Hazmat Division, complete all worksheets in the NSF Field Guidebook

### ***I.B.7 Small Boats***

Proficient understanding and knowledge of all small boats at unit including the following:

- a. Specifications of each boat
- b. Locate all safety equipment on board; ability to use
- c. Survival procedures in case of capsizing
- d. Locate the gear box
- e. Ability to operate all electronic equipment
- f. Type of fuel required
- g. Crew requirements

### ***I.B.8 SKC Pumps***

Proficient understanding and ability to operate the SKC Pump including the following:

- a. Identify the components of the SKC Pump
- b. Set the flow rate and timer
- c. Select the appropriate sample media for a given scenario
- d. Perform tests on an "unknown" sample in accordance with the manufacturer's technician manual
- e. Calibrate the SKC pump
- f. State when the SKC pump would be used for sampling

## Section

## II. RESPONSE TECHNICIAN

Member must successfully complete any written or practical examination given in this training block. In addition, member must obtain all relevant certificates of course completion or a passing score on any correspondence course. This training module is aligned with 29 CFR 1910.120(q)(6)(iii) and NFPA 472 Chapter 4.

### II.A COURSE OBJECTIVES

#### ***II.A.1 Hazmat Technician Specialist***

*PLACEHOLDER FOR COURSE OBJECTIVES*

#### ***II.A.2 Hazmat Safety Officer EPA 165***

The following course objectives come from chapters 8 (Competencies for the Hazardous Materials Branch Safety Officer Specialty) of the NFPA standards. This standard should also be read and studied when qualifying as a Hazmat Safety Officer.

##### **Objectives:**

- a. Identify the safety precautions for potential action options.
- b. Provide recommendations regarding safety considerations.
- c. Assist in the development of a plan of action.
- d. Review the plan of action and provide recommendations regarding safety.
- e. Review the selection of personnel protective equipment for a given action option.
- f. Review the decontamination operations.
- g. Ensure that the proper emergency medical services are provided.
- h. Perform the duties of the hazardous materials branch safety officer (with in the incident command structure).
- i. Identify safety considerations for personnel performing control functions identified in the plan.
- j. Conduct safety briefings for personnel performing the control functions identified in the plan of action.
- k. Assist in the implementation and enforcement of safety considerations.
- l. Maintain communications within the incident command structure during the incident.
- m. Monitor status reports of activities in the hot and warm zones.
- n. Ensure the implementation of exposure monitoring (personnel and environment)
- o. Identify deviations from safety considerations and any dangerous situations.

- p. Alter, suspend, or terminate any activity that can be judged to be unsafe.
- q. Perform the reporting, documentation and follow-up required of the hazardous materials branch safety officer.
- r. Assist in the debriefing of hazardous materials branch (use ICS term of operations) personnel.
- s. Assist in the incident critique.

**Performance Objectives:**

- a. Describe the following radioactive materials terms and explain their significance in predicting the extent of health hazards and environmental impact in a hazardous materials incident.
  - i Types
  - ii Measurement
  - iii Protection
- b. Describe the following toxicological terms and exposure values and explain their significance in the risk assessment process.
  - i Parts per million (ppm)
  - ii Parts per billion (ppb)
  - iii Lethal dose (LD50)
  - iv Lethal concentrations (LC50)
  - v Permissible exposure limit (PEL)
  - vi Recommended exposure limit (REL-TWA)(NIOSH)
  - vii Threshold limit value time-weighted average (TLV-TWA)(ACGIH)
  - viii Threshold limit value short-term exposure limit (TLV-STEL)(ACGIH)
  - ix Threshold limit value Ceiling (TLV-C)
  - x Immediately dangerous to life and health value (IDLH)
- c. Explain the basic toxicological principles relative to assessment and treatment of personnel exposed to hazardous materials, including.
  - i Acute and delayed toxicity
  - ii Dose-response
  - iii Local and systemic effects
  - iv Routes of exposure to toxic materials
  - v Synergistic effects
- d. Identify five conditions where personnel would not be allowed to enter the hot zone.
- e. Given the names of five hazardous materials and at least three references sources, identify the physical and chemical properties, health concerns, hazards or physical conditions, and their potential impact on the safety and health of personnel at an incident involving each of the materials.
- f. Identify the type(s) of monitoring equipment test strips, and reagents used to determine the following hazards.
  - i Corrosively (pH)
  - ii Flammability
  - iii Oxidation potential
  - iv Oxygen deficiency
  - v Toxic Levels
  - vi Radioactivity
- g. Identify the capabilities and limiting factors associated with the selection and use of the following monitoring equipment.
  - i Carbon monoxide meter
  - ii Colorimetric tubes
  - iii Combustible gas indicator
  - iv Oxygen meter
  - v Passive dosimeter
  - vi Photo ionization detectors (PID)
  - vii pH indicators and / or pH meters

- viii Radiation detection instruments
- ix Reagents
- x Test strips
- h. Given three hazardous materials, one of which is a solid, one a liquid, and one a gas, and the following monitoring equipment, select and demonstrate the appropriate equipment to identify and quantify the materials.
  - i Carbon monoxide meter
  - ii Colorimetric tubes
  - iii Combustible gas indicator
  - iv Oxygen meter
  - v Photo ionization detectors
  - vi pH indicators and / or pH meters
  - vii Radiation detection instruments
  - viii Reagents
  - ix Test strips
- i. Identify five safety precautions associated with search and rescue missions at hazardous materials incidents.
- j. Identify the importance and list five benefits of pre-emergency planning relating to specific sites.
- k. Identify and name five hazards and precautions to be observed when approaching a hazardous materials incident.
- l. Make recommendations to the incident commander on the safety considerations to be included in the plan of action.
- m. Identify the four levels of chemical protection (EPA / NIOSH) and describe the equipment required for each level and the conditions under which each level is used.
- n. Identify the advantages and limitations and describe an example where each of the following decontamination methods would be used.
  - i Absorption
  - ii Adsorption
  - iii Chemical degradation
  - iv Dilution
  - v Disposal
  - vi Evaporation
  - vii Neutralization
  - viii Solidification
  - ix Vacuuming
  - x Washing
- o. Explain the need for decontamination procedures at hazardous materials incidents.
- p. Identify the considerations associated with the placement, location, and setup of the decontamination corridor.
- q. Identify the importance of an on-site medical monitoring program.
- r. Identify how the following factors influence heat and cold stress for hazardous materials response personnel.
  - i Activity levels
  - ii Duration of entry
  - iii Environmental factors
  - iv Hydration
  - v Level of PPE
  - vi Physical fitness
- s. Identify whether the boundaries of the established control zones are clearly marked, consistent with the safety considerations, and are being maintained.
- t. Identify whether a backup team with the appropriate level of personal protective equipment is prepared at all times for immediate entry into the hot zone during entry team operations.
- u. Identify three safety considerations that can minimize secondary contamination.

- v. Identify three types of communication systems used at hazardous materials incident sites.
- w. Identify whether all personnel understand emergency alerting and response procedures before any work is conducted.
- x. Identify dangerous conditions that develop or are identified during work in the hot or warm zone that threaten the safety or health of persons in those zones.
- y. Given a demonstrated emergency alert via hand signal by a member of the entry team operating within the hot zone, identify the meaning of that signal as specified in the safety considerations.
- z. Describe the importance of personnel exposure records.
- aa. Identify five health and safety topics to be addressed in an incident debriefing.

### ***II.A.3 Confined Space Entry Rescue***

US Code of Federal Regulation Reference CFR 29, 1910.146  
NFPA 1670 & 1006, ANSI Z117.1

This course teaches the concepts necessary to work safely in a confined space as an entrant or outside the space as an attendant. You will be able to properly prepare the space for entry, make a safe entry, perform the duties as attendant, and know what to do in an emergency.

#### **Objectives**

- a. What is a Confined Space?
- b. Defining a Confined Space
- c. Asphyxiating atmospheres
- d. Toxic atmospheres
- e. Flammable or explosive atmospheres
- f. Mechanical hazards
- g. Physical hazards
- h. Engulfment
- i. Protecting Yourself
- j. Precautions
- k. The Entry Permit
- l. Entry Preparation
- m. Isolating the space
- n. Explosive atmospheres
- o. Cleaning residue
- p. Air testing
- q. Atmospheric hazards
- r. Personal Protective Equipment
- s. Entering the Space
- t. The Attendant
- u. The Entrant
- v. Rescue Techniques
- w. Understanding the rescue process
- x. Non-entry rescue
- y. Entry by others

z. Entry by trained company employees

Performance Objectives

- a. Recognize confined space hazards
- b. Identify types of hazards in confined spaces.
- c. Choose reasons why oxygen could be depleted.
- d. Recognize flammable and explosive atmospheres as confined space hazards.
- e. Choose examples of engulfment hazards.
- f. Identify an example of a mechanical hazard in a confined space.
- g. Identify falls and excessive noise as confined space hazards.
- h. Define a confined space.
- i. Use proper controls for confined space entries
- j. List steps to protect yourself from confined space hazards.
- k. Describe the entry permit.
- l. Select information included on a confined space entry permit.
- m. Explain what to do if a permit expires before work is complete.
- n. Properly prepare for confined space entry
- o. State the first step in entry preparation.
- p. Choose Communications equipment.
- q. Choose examples of proper entry preparation.
- r. Agree to check the permit to help identify potential hazards.
- s. Explain how to isolate a confined space from chemical process hazards.
- t. Agree to clean all tanks or vessels that contain hazardous residues before working in a confined space.
- u. Procedures for selection, construction, and use of line and Confined Space Equipment in all environments.
- v. List types of personal protective equipment you may use in a confined space.
- w. Use proper testing techniques for confined spaces
- x. List necessary steps of air testing.
- y. Choose the correct order for testing gases.
- z. Recall the need to wear appropriate personal protective equipment if testing must be done in a confined space.
- aa. Use proper confined space entry procedures
- bb. Differentiate between the entrant and the attendant.
- cc. Select the area where the attendant should be stationed.
- dd. Identify attendant responsibilities.
- ee. Identify entrant responsibilities.
- ff. Follow proper confined space rescue techniques
- gg. Recall that 60% of confined space deaths involve people trying to rescue other injured people.
- hh. List the three types of confined space rescues.
- ii. Agree that if a non-entry rescue is not possible, trained people must perform the rescue.
- jj. List the requirements of an on-site rescue team.
- kk. Identify if the space can accommodate two or more rescuers.
- ll. Victim packaging devices that could be used in an confined space rescue
- mm. Procedures for the transfer of victim info including location, surroundings, condition when found, and other info pertinent to EMS

### ***II.A.4 Weapons of Mass Destruction (WMD) Course***

#### **NSF Objectives**

- a. State the NSF roles and responsibilities during WMD response
- b. State NSF capabilities and limitations, especially as they relate to a pre-positioned or at the hangar response posture
- c. Identify the equipment in the NSF inventory for WMD agent detection. State any special concerns, calibration requirements and limitations of these items
- d. Identify additional stakeholder agencies and their roles in WMD response
- e. Demonstrate knowledge of the NRS and FRP

#### **NFPA Objectives**

- a. Identify types of locations that could become targets for criminal or terrorist activity using hazardous materials
- b. Identify at least 4 indicators of possible criminal or terrorist activity involving hazardous materials
- c. Identify the specific actions necessary when an incident is suspected to involve criminal or terrorist activity
- d. Identify at least 3 additional hazards that could be associated with an incident involving criminal or terrorist activity
- e. Identify the type of assistance provided by the federal defense authorities, such as Defense Logistics Agency and U.S. Army Operations Center, with respect to criminal or terrorist activities involving hazardous materials
- f. Identify the procedure for contacting federal defense authorities as specified in the local emergency response plan (ERP) or the organization's standard operating procedure (SOP)
- g. Identify the corresponding DOT hazard class and division for the following types of warfare agents:
  - i. Nerve agents
  - ii. Vesicants (blister agents)
  - iii. Blood agents
  - iv. Choking agents
  - v. Irritants (riot control agents)
  - vi. Biological agents and toxins
- h. Describe the procedure listed in the local emergency response plan or the organization's standard operating procedures for decontamination of a large number of people exposed to hazardous materials
- i. Describe procedures, such as those listed in the local emergency response plan or the organization's standard operating procedures, to preserve evidence at hazardous materials incidents involving suspected criminal or terrorist acts
- j. Describe a method that can be used to detect the following items:
  - i. Nerve agents
  - ii. Vesicants
  - iii. Biological agents and toxins
  - iv. Irritants
- k. Demonstrate a method for collecting samples of liquid, solid and gas
- l. Identify the procedures, equipment, and safety precautions for collecting legal evidence at hazardous materials incidents
- m. Describe the health risks associated with the following:
  - i. Nerve agents
  - ii. Vesicants
  - iii. Blood agents
  - iv. Choking agents
  - v. Biological agents and toxins
  - vi. Irritants

- n. Identify the limitations of military chemical/biological protective clothing
- o. Identify the procedures required for legal documentation and chain of custody/continuity described in the organization's standard operating procedures or the local emergency response plan
- p. Given either a facility or transportation scenario involving hazardous materials, regardless of the presence of criminal or terrorist activities, identify the appropriate initial notifications to be made and how to make them, consistent with the local emergency response plan or the organization's standard operating procedures
- q. Identify the items to be considered in safety briefing prior to allowing personnel to work at a hazardous materials incident involving criminal or terrorist activities
- r. Describe the following terms and explain their significance in the risk assessment process:
  - i. Biological agents and toxins
  - ii. Irritants
  - iii. Nerve agents
  - iv. Vesicants
- s. Given the local emergency response plan and/or the organization's standard operating procedures, identify which agency will perform the following:
  - i. Implement on-site accountability
  - ii. Provide on-site responder identification
  - iii. Provide command post security
  - iv. Provide crime scene investigation
  - v. Provide evidence collection and sampling

### ***II.A.5 Full SCAT NOAA***

This course is designed to improve on the member's understanding of coastal process, shoreline process and types, oil chemistry, and oil behavior on different shoreline types and environments. The member will be able to demonstrate shoreline vegetation identification, various shoreline survey techniques, clean up techniques, and SCAT survey methods.

#### **NOAA Objectives**

- a. Discuss the role of SCAT in the Response Organization
- b. Discuss Coastal Processes: Waves, Currents, Tides and Wind
- c. Discuss general Oil Chemistry
- d. Introduction to Coastal Environments, Definitions, Origins, Geomorphology and Sediments
- e. Discuss the behavior of oil on various beach types
- f. Discuss the cleanup of oil on various beach types
- g. Demonstrate the ability to perform SCAT survey of various types of sediments, terrains etc.
- h. Discuss oil behavior in Marsh areas
- i. Discuss In-Situ Burning of Marshes
- j. Demonstrate survey techniques of Marsh areas identifying various vegetation and various cleanup methods
- k. Identify and demonstrate proper technique for filling out all SCAT forms, matrix etc.

### ***II.A.6 EPA Sampling***

#### **Air Monitoring Course Objectives**



- a. Properly describe and use the following types of air monitoring and sampling equipment:
  - i Combustible gas indicator
  - ii Oxygen monitors
  - iii Detector tubes
  - iv Toxic gas monitors
  - v Photoionization detectors
  - vi Flame ionization detectors
  - vii Gas chromatographs
  - viii Sampling pumps and collection media
  - ix Direct-reading aerosol monitors
- b. Identify the operational parameters, limitations, and data interpretation requirements for the instruments listed above.
- c. Identify the factors to be considered in the development of air monitoring and sampling plans.
- d. Discuss the use of air monitoring data for the establishment of personnel and operation health and safety requirements.
- e. List the six objectives of air monitoring specified by the EPA Standard Operating Safety Guides.
- f. Identify the OSHA and EPA standards that cover hazardous waste site operations and emergency response.
- g. Identify the five hazardous conditions that 29 CFR 1910.120 requires to be checked during initial site entry.
- h. State when periodic monitoring and personnel monitoring are required by 29 CFR 1910.120
- i. List three air-monitoring actions that 29 CFR 1910.120 requires in the site safety and health plan.
- j. Given 29 CFR 1910.120(q), state the three air monitoring requirements for the individual in charge of the Incident Command System (ICS).
- k. Given 29 CFR 1910.120(q), state the air-monitoring training requirements for the hazardous materials technician and the hazardous materials specialist.
- l. State the NSF SOP for all Action levels and exposure limits.
- m. List four differences between direct-reading instruments and air sample collection.
- n. List three sources of air sampling and analysis methods developed by U. S. Government agencies.
- o. Define the different particle size terms and describe methods of collecting different particle sizes.
- p. Describe the following types of sampling devices, as well their uses and any special considerations.
  - i Solid sorbents
  - ii Liquid sorbents
  - iii Gas bags
  - iv Canisters
  - v Combination media
  - vi Passive dosimeters
- q. Define gas chromatography and describe its uses and limitations.
- r. Identify a gas chromatograph (CG) and describe its components.
- s. List three types of field applications of portable CG's.
- t. Identify the two major dispersion modeling applications and the two dispersion modeling classes.
- u. Identify the components of dispersion modeling during an emergency removal process.
- v. Identify the six major meteorological data needs.
- w. Give an example of the following:
  - i Contingency model

- ii Accidental release model
- iii Short term site assessment dispersion model
- iv Long term site assessment dispersion model
- x. Demonstrate an air dispersion computer model (Cameo, Aloha, Marplot).

#### **Hazardous Material Sampling Course Objectives:**

- a. Identify, show competency and state the use of the following:
  - i Bacon bomb
  - ii Auger kits
  - iii Grab sampler/Clam shell
  - iv Calawasa tubes
  - v Drum thieves
  - vi Alpha bottle
  - vii Soil gas prob
  - viii Sludge judge
  - ix Siphon pumps
- b. Select the appropriate field screening method for a given contaminant and geologic environment.
- c. Select the appropriate sampling container and sample preservation method based on the sample media and analysis required.
- d. Select the appropriate sampling implements and methods for sampling various containerized wastes.
- e. Select the appropriate tools and methods for sampling surface water and sediments.
- f. Describe the basic methods of soil sampling in the unsaturated zone.
- g. Demonstrate the proper method for obtaining a groundwater sample from a monitoring well.
- h. Complete the required documentation, including chain of custody and sample labels, for shipment of environmental samples to an analytical laboratory
- i. Complete the fundamental tasks in a sampling event from initial site investigation through field data collection.

### ***II.A.7 Oil Spill Response Course***

#### **Oil Spill Response in Ports and Waterways - Texas A&M National Spill**

**Control School** The cost of this 5-day course is \$695.00 per government student. POC for this course is Dr. Barnes at the National Spill Control School: 361.825.3333

The course is designed to improve the level of skill related to oil spill response. This course is designed to serve a two-fold purpose: to provide field training in oil spill response techniques and to satisfy regulatory requirements for safety training of emergency responders. The training revolves around hands-on field exercises in boat handling, boom deployment and recovery, and pump and skimmer operations. Course objectives include classroom discussion and field demonstration of response techniques and equipment, environmental hazards, and personal safety hazards.

#### **Course Objectives**

- a. Discuss Oil Spill Response techniques and strategies
- b. Review MSDS's- Petroleum Hydrocarbons
- c. Discuss Heat Stress and Hypothermia
- d. Identify levels of PPE during spill responses
- e. Perform Decon of Personnel and Equipment

- f. Practice Boat Handling and Water Safety
- g. Identify various parts of Booms
- h. Demonstrate Boom deployment and recovery
- i. Discuss and Identify Pump and Skimmer Operations and Shoreline Recovery Systems
- j. Demonstrate Booming a vessel
- k. Demonstrate Booming in currents
- l. Demonstrate Corraling, Cascading and Chevron Booming

### ***II.A.8 Unit RCRA Course***

- a. Identify regulatory requirements for generators of Hazardous Waste.
  - ii. Define Resource Conservation and Recovery Act
  - iii. Identify some generators of Haz Waste
  - iiii. List requirements for Haz Waste generators.
  - vi. State the requirements and fill out a Haz Waste Manifest
- b. Define Haz Waste and its characteristics.
  - ii. Find the listing of Haz Waste in 49 CFR.
- c. State the requirements for storage of Haz Waste as they pertain to the following:
  - ii. Labeling
  - iii. Proper contents
  - iiii. Storage of Haz Waste
  - vi. Chemical compatibilities.
  - vi. Chemical Incompatibilities.
- d. State requirements for the following other types of Haz Waste
  - ii. Biohazard Waste
  - iii. Mixed waste.
  - iiii. Polychlorinated Biphenyls (PCB's)
  - vi. Waste oils and Lubricants.
- e. State requirements associated with Haz Waste emergencies and spill response.
  - ii. Preventing for emergency and preventing accidents.
  - iii. Emergency Coordinator Responsibilities.
  - iiii. Requirements for emergencies.
  - vi. Emergency Planning requirements specific to large quantity generators.
- f. Identify requirements associated with shipping haz waste from your facility.
  - ii. Choosing a Haz Waste transporter and designated waste management facility
  - iii. Preparing your Haz Waste for shipment.
  - iiii. The uniform Haz Waste manifest.
  - vi. Land disposal restriction notice.
  - vi. Biennial reports.
- g. State requirements associated with used oil and oil waste.
  - ii. What is used oil.
  - iii. Types of used oil.
  - iiii. Used oil generators.
  - vi. What must used oil generators do when managing used oil.
  - vi. Burning used oil from other generators.
  - vii. What about PCB's.
  - viii. Recycling and pollution prevention opportunities.

### ***II.A.9 I-300 / Division-Group Supervisor***

*PLACEHOLDER FOR COURSE OBJECTIVES*

**II.A.10 DC Vessel Damage Assessment** (correspondence course)

PLACEHOLDER FOR COURSE OBJECTIVES

**II.A.11 FEMA RAD** (online course at <http://training.fema.gov/emiweb/is3.htm> )

PLACEHOLDER FOR COURSE OBJECTIVES

**II.A.12 FEMA / NFPA Emergency Response to Terrorism** (correspondence course)

PLACEHOLDER FOR COURSE OBJECTIVES

**II.B SATISFACTORILY DEVELOP & SUBMIT THE FOLLOWING PLANS****II.B.1 Site Safety Plan**

IAW NSF SOP & 29 CFR 1910.120(b)(4)

**II.B.2 Sampling Plan**

Comprehensive plan for hazardous categorization and hazardous waste profiling

**II.B.3 Air Monitoring / Surveillance program**

Given a hazardous scenario with several known substances; include types of sampling, types of instruments/monitors, frequency and location of use; be sure to consider all logistics, staffing and safety.

**II.B.4 Work regimen**

Given a scenario, establish a regimen IAW NSF fatigue standards.

**II.B.5 Perimeter sampling plan for SKC Pumps**

Given a scenario, establish a sampling plan (also state the available agency and resources for air sampling).

**II.B.6 Perimeter Sampling plan for Area Rae**

Given a scenario, establish a sampling plan.

**II.C SATISFACTORILY DEMONSTRATE THE FOLLOWING COMPETENCIES**

***II.C.1 Use the HazCat Kit******II.C.2 Prime Movers and Hydraulic Systems***

- a. State the connections required to be made before starting the Yanmar prime mover when deploying the inflatable boom
- b. State the minimum and maximum operating parameters (hydraulic flow and pressures) for Deutz, HIIPU, Inflatable and Fast Sweep Boom's prime movers
- c. State the purpose of the AMOT Safety Control on the HIIPU
- d. Replace the "o" ring and seal in the female fitting of a hydraulic hose
- e. State types of hydraulic fluids used in each of the prime movers
- f. Set up and lead all of the logistical and cost documentation requirements necessary for the setup operation of the NSF prime movers for a 24-hour period

***II.C.3 Resource Documentation***

- a. Review resource documentation submitted by RM for unit exercise
- b. Given a scenario, complete a Pollution Incident Daily Resource Report Contractor Short Form (CG-5136E)
- c. Review Form 1900-55
- d. Prepare an example CG-5136F Ceiling Management and Incident Obligation Log
- e. Prepare a Pollution Removal Funding Authorization for SSC assistance in oil projections
- f. Complete a case folder and ensure submission to FOSC via RS

***II.C.4 Mobile Incident Command Post***

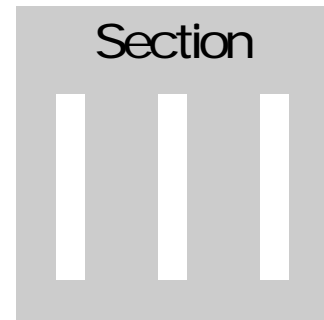
- a. Operate the communication package in the MICP
- b. Describe procedures for obtaining outside electrical power and auxiliary services for the MICP

***II.C.5 Reference Resource Library***

- a. Given a scenario from your Hazmat Division, complete all worksheets in the National Strike Force Field Guidebook

***II.C.6 Small Boats***

- a. Ability to launch and recover all small boats in unit's inventory
- b. Proficient understanding of the Boat Crew Fatigue Standards



### III. RESPONSE SUPERVISOR

Member must successfully complete any written or practical examination given in this training block. In addition, member must obtain all relevant certificates of course completion or a passing score on any correspondence course. This training module is aligned with 29 CFR 1910.120(q)(6)(iii) and NFPA 472 Chapter 4.

#### III.A COURSE OBJECTIVES

##### **III.A.1 Hazmat Incident Commander**

*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.2 EPA Health & Safety for Decision Makers 165.8**

*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.3 Incident Response Planning Workshop**

*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.4 OSLTF FFARM**

*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.5 IIPO** (correspondence course)

*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.6 FEMA Professionals in Emergency Management** (correspondence course)

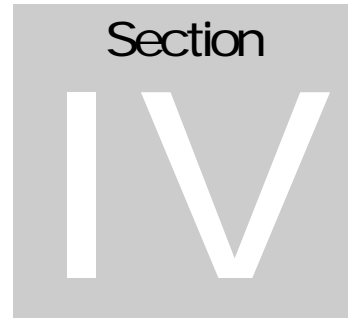
*PLACEHOLDER FOR COURSE OBJECTIVES*

##### **III.A.7 Leadership & Management course (or similar course)**

*PLACEHOLDER FOR COURSE OBJECTIVES*

### **III.B LEAD & EVALUATE RT-LED DRILLS & EXERCISES**

Members are directed to use the NSF QUALIFICATION EXERCISE EVALUATION WORKSHEET located in appendix A. Fill out completely and place a copy in member's qualification book (both RS and RT). The original shall be submitted to unit Training Officer to be placed in training files.



## IV. RESPONSE OFFICER

Member must successfully complete any written or practical examination given in this training block. In addition, member must obtain all relevant certificates of course completion or a passing score on any correspondence course. This training module is aligned with 29 CFR 1910.120(q)(6)(iii) and NFPA 472 Chapter 4.

### IV.A COURSE OBJECTIVES

#### ***IV.A.1 Full SCAT NOAA***

This course is designed to improve on the member's understanding of coastal process, shoreline process and types, oil chemistry, and oil behavior on different shoreline types and environments. The member will be able to demonstrate shoreline vegetation identification, various shoreline survey techniques, clean up techniques, and SCAT survey methods.

##### NOAA Objectives

- l. Discuss the role of SCAT in the Response Organization
  - m. Discuss Coastal Processes: Waves, Currents, Tides and Wind
  - n. Discuss general Oil Chemistry
  - o. Introduction to Coastal Environments, Definitions, Origins, Geomorphology and Sediments
  - p. Discuss the behavior of oil on various beach types
  - q. Discuss the cleanup of oil on various beach types
  - r. Demonstrate the ability to perform SCAT survey of various types of sediments, terrains etc.
  - s. Discuss oil behavior in Marsh areas
  - t. Discuss In-Situ Burning of Marshes
  - u. Demonstrate survey techniques of Marsh areas identifying various vegetation and various cleanup methods
- Identify and demonstrate proper technique for filling out all SCAT forms, matrix etc.

#### ***IV.A.2 Hazmat Safety Officer***

The following course objectives come from chapters 8 (Competencies for the Hazardous Materials Branch Safety Officer Specialty) of the NFPA standards. This standard should also be read and studied when qualifying as a Hazmat Safety Officer.

##### **Objectives:**



- t. Identify the safety precautions for potential action options.
- u. Provide recommendations regarding safety considerations.
- v. Assist in the development of a plan of action.
- w. Review the plan of action and provide recommendations regarding safety.
- x. Review the selection of personnel protective equipment for a given action option.
- y. Review the decontamination operations.
- z. Ensure that the proper emergency medical services are provided.
- aa. Perform the duties of the hazardous materials branch safety officer (with in the incident command structure).
- bb. Identify safety considerations for personnel performing control functions identified in the plan.
- cc. Conduct safety briefings for personnel performing the control functions identified in the plan of action.
- dd. Assist in the implementation and enforcement of safety considerations.
- ee. Maintain communications within the incident command structure during the incident.
- ff. Monitor status reports of activities in the hot and warm zones.
- gg. Ensure the implementation of exposure monitoring (personnel and environment)
- hh. Identify deviations from safety considerations and any dangerous situations.
- ii. Alter, suspend, or terminate any activity that can be judged to be unsafe.
- jj. Perform the reporting, documentation and follow-up required of the hazardous materials branch safety officer.
- kk. Assist in the debriefing of hazardous materials branch (use ICS term of operations) personnel.
- ll. Assist in the incident critique.

**Performance Objectives:**

- bb. Describe the following radioactive materials terms and explain their significance in predicting the extent of health hazards and environmental impact in a hazardous materials incident.
  - i. Types
  - ii. Measurement
  - iii. Protection
- cc. Describe the following toxicological terms and exposure values and explain their significance in the risk assessment process.
  - xi. Parts per million (ppm)
  - xii. Parts per billion (ppb)
  - xiii. Lethal dose (LD50)
  - xiv. Lethal concentrations (LC50)
  - xv. Permissible exposure limit (PEL)
  - xvi. Recommended exposure limit (REL-TWA)(NIOSH)
  - xvii. Threshold limit value time-weighted average (TLV-TWA)(ACGIH)
  - xviii. Threshold limit value short-term exposure limit (TLV-STEL)(ACGIH)
  - xix. Threshold limit value Ceiling (TLV-C)
  - xx. Immediately dangerous to life and health value (IDLH)
- dd. Explain the basic toxicological principles relative to assessment and treatment of personnel exposed to hazardous materials, including.
  - vi. Acute and delayed toxicity
  - vii. Dose-response
  - viii. Local and systemic effects
  - ix. Routes of exposure to toxic materials
  - x. Synergistic effects
- ee. Identify five conditions where personnel would not be allowed to enter the hot zone.

- ff. Given the names of five hazardous materials and at least three references sources, identify the physical and chemical properties, health concerns, hazards or physical conditions, and their potential impact on the safety and health of personnel at an incident involving each of the materials.
- gg. Identify the type(s) of monitoring equipment test strips, and reagents used to determine the following hazards.
  - vii Corrosively (pH)
  - viii Flammability
  - ix Oxidation potential
  - x Oxygen deficiency
  - xi Toxic Levels
  - xii Radioactivity
- hh. Identify the capabilities and limiting factors associated with the selection and use of the following monitoring equipment.
  - xi Carbon monoxide meter
  - xii Colorimetric tubes
  - xiii Combustible gas indicator
  - xiv Oxygen meter
  - xv Passive dosimeter
  - xvi Photo ionization detectors (PID)
  - xvii pH indicators and / or pH meters
  - xviii Radiation detection instruments
  - xix Reagents
  - xx Test strips
- ii. Given three hazardous materials, one of which is a solid, one a liquid, and one a gas, and the following monitoring equipment, select and demonstrate the appropriate equipment to identify and quantify the materials.
  - x Carbon monoxide meter
  - xi Colorimetric tubes
  - xii Combustible gas indicator
  - xiii Oxygen meter
  - xiv Photo ionization detectors
  - xv pH indicators and / or pH meters
  - xvi Radiation detection instruments
  - xvii Reagents
  - xviii Test strips
- jj. Identify five safety precautions associated with search and rescue missions at hazardous materials incidents.
- kk. Identify the importance and list five benefits of pre-emergency planning relating to specific sites.
- ll. Identify and name five hazards and precautions to be observed when approaching a hazardous materials incident.
- mm. Make recommendations to the incident commander on the safety considerations to be included in the plan of action.
- nn. Identify the four levels of chemical protection (EPA / NIOSH) and describe the equipment required for each level and the conditions under which each level is used.
- oo. Identify the advantages and limitations and describe an example where each of the following decontamination methods would be used.
  - xi Absorption
  - xii Adsorption
  - xiii Chemical degradation
  - xiv Dilution
  - xv Disposal
  - xvi Evaporation
  - xvii Neutralization

- xviii Solidification
- xix Vacuuming
- xx Washing
- pp. Explain the need for decontamination procedures at hazardous materials incidents.
- qq. Identify the considerations associated with the placement, location, and setup of the decontamination corridor.
- rr. Identify the importance of an on-site medical monitoring program.
- ss. Identify how the following factors influence heat and cold stress for hazardous materials response personnel.
  - vii Activity levels
  - viii Duration of entry
  - ix Environmental factors
  - x Hydration
  - xi Level of PPE
  - xii Physical fitness
- tt. Identify whether the boundaries of the established control zones are clearly marked, consistent with the safety considerations, and are being maintained.
- uu. Identify whether a backup team with the appropriate level of personal protective equipment is prepared at all times for immediate entry into the hot zone during entry team operations.
- w. Identify three safety considerations that can minimize secondary contamination.
- ww. Identify three types of communication systems used at hazardous materials incident sites.
- xx. Identify whether all personnel understand emergency alerting and response procedures before any work is conducted.
- yy. Identify dangerous conditions that develop or are identified during work in the hot or warm zone that threaten the safety or health of persons in those zones.
- zz. Given a demonstrated emergency alert via hand signal by a member of the entry team operating within the hot zone, identify the meaning of that signal as specified in the safety considerations.
- aaa. Describe the importance of personnel exposure records.
- bbb. Identify five health and safety topics to be addressed in an incident debriefing.

### ***IV.A.3 Confined Space Entry Rescue***

US Code of Federal Regulation Reference CFR 29, 1910.146  
 NFPA 1670 & 1006, ANSI Z117.1

This course teaches the concepts necessary to work safely in a confined space as an entrant or outside the space as an attendant. You will be able to properly prepare the space for entry, make a safe entry, perform the duties as attendant, and know what to do in an emergency.

#### **Objectives**

- aa. What is a Confined Space?
- bb. Defining a Confined Space
- cc. Asphyxiating atmospheres
- dd. Toxic atmospheres
- ee. Flammable or explosive atmospheres

- ff. Mechanical hazards
- gg. Physical hazards
- hh. Engulfment
- ii. Protecting Yourself
- jj. Precautions
- kk. The Entry Permit
- ll. Entry Preparation
- mm. Isolating the space
- nn. Explosive atmospheres
- oo. Cleaning residue
- pp. Air testing
- qq. Atmospheric hazards
- rr. Personal Protective Equipment
- ss. Entering the Space
- tt. The Attendant
- uu. The Entrant
- vv. Rescue Techniques
- ww. Understanding the rescue process
- xx. Non-entry rescue
- yy. Entry by others
- zz. Entry by trained company employees

#### Performance Objectives

- nn. Recognize confined space hazards
- oo. Identify types of hazards in confined spaces.
- pp. Choose reasons why oxygen could be depleted.
- qq. Recognize flammable and explosive atmospheres as confined space hazards.
- rr. Choose examples of engulfment hazards.
- ss. Identify an example of a mechanical hazard in a confined space.
- tt. Identify falls and excessive noise as confined space hazards.
- uu. Define a confined space.
- vv. Use proper controls for confined space entries
- ww. List steps to protect yourself from confined space hazards.
- xx. Describe the entry permit.
- yy. Select information included on a confined space entry permit.
- zz. Explain what to do if a permit expires before work is complete.
- aaa. Properly prepare for confined space entry
- bbb. State the first step in entry preparation.
- ccc. Choose Communications equipment.
- ddd. Choose examples of proper entry preparation.
- eee. Agree to check the permit to help identify potential hazards.
- fff. Explain how to isolate a confined space from chemical process hazards.
- ggg. Agree to clean all tanks or vessels that contain hazardous residues before working in a confined space.
- hhh. Procedures for selection, construction, and use of line and Confined Space Equipment in all environments.
- iii. List types of personal protective equipment you may use in a confined space.
- jjj. Use proper testing techniques for confined spaces
- kkk. List necessary steps of air testing.
- lll. Choose the correct order for testing gases.

- mmm. Recall the need to wear appropriate personal protective equipment if testing must be done in a confined space.
- nnn. Use proper confined space entry procedures
- ooo. Differentiate between the entrant and the attendant.
- ppp. Select the area where the attendant should be stationed.
- qqq. Identify attendant responsibilities.
- rrr. Identify entrant responsibilities.
- sss. Follow proper confined space rescue techniques
- ttt. Recall that 60% of confined space deaths involve people trying to rescue other injured people.
- uuu. List the three types of confined space rescues.
- vvv. Agree that if a non-entry rescue is not possible, trained people must perform the rescue.
- www. List the requirements of an on-site rescue team.
- xxx. Identify if the space can accommodate two or more rescuers.
- yyy. Victim packaging devices that could be used in an confined space rescue
- zzz. Procedures for the transfer of victim info including location, surroundings, condition when found, and other info pertinent to EMS

#### ***IV.A.4 Weapons of Mass Destruction (WMD) Course***

##### **NSF Objectives**

- f. State the NSF roles and responsibilities during WMD response
- g. State NSF capabilities and limitations, especially as they relate to a pre-positioned or at the hangar response posture
- h. Identify the equipment in the NSF inventory for WMD agent detection. State any special concerns, calibration requirements and limitations of these items
- i. Identify additional stakeholder agencies and their roles in WMD response
- j. Demonstrate knowledge of the NRS and FRP

##### **NFPA Objectives**

- t. Identify types of locations that could become targets for criminal or terrorist activity using hazardous materials
- u. Identify at least 4 indicators of possible criminal or terrorist activity involving hazardous materials
- v. Identify the specific actions necessary when an incident is suspected to involve criminal or terrorist activity
- w. Identify at least 3 additional hazards that could be associated with an incident involving criminal or terrorist activity
- x. Identify the type of assistance provided by the federal defense authorities, such as Defense Logistics Agency and U.S. Army Operations Center, with respect to criminal or terrorist activities involving hazardous materials
- y. Identify the procedure for contacting federal defense authorities as specified in the local emergency response plan (ERP) or the organization's standard operating procedure (SOP)
- z. Identify the corresponding DOT hazard class and division for the following types of warfare agents:
  - i. Nerve agents
  - ii. Vesicants (blister agents)
  - iii. Blood agents
  - iv. Choking agents
  - v. Irritants (riot control agents)
  - vi. Biological agents and toxins

- aa. Describe the procedure listed in the local emergency response plan or the organization's standard operating procedures for decontamination of a large number of people exposed to hazardous materials
- bb. Describe procedures, such as those listed in the local emergency response plan or the organization's standard operating procedures, to preserve evidence at hazardous materials incidents involving suspected criminal or terrorist acts
- cc. Describe a method that can be used to detect the following items:
  - i. Nerve agents
  - ii. Vesicants
  - iii. Biological agents and toxins
  - iv. Irritants
- dd. Demonstrate a method for collecting samples of liquid, solid and gas
- ee. Identify the procedures, equipment, and safety precautions for collecting legal evidence at hazardous materials incidents
- ff. Describe the health risks associated with the following:
  - i. Nerve agents
  - ii. Vesicants
  - iii. Blood agents
  - iv. Choking agents
  - v. Biological agents and toxins
  - vi. Irritants
- gg. Identify the limitations of military chemical/biological protective clothing
- hh. Identify the procedures required for legal documentation and chain of custody/continuity described in the organization's standard operating procedures or the local emergency response plan
- ii. Given either a facility or transportation scenario involving hazardous materials, regardless of the presence of criminal or terrorist activities, identify the appropriate initial notifications to be made and how to make them, consistent with the local emergency response plan or the organization's standard operating procedures
- jj. Identify the items to be considered in safety briefing prior to allowing personnel to work at a hazardous materials incident involving criminal or terrorist activities
- kk. Describe the following terms and explain their significance in the risk assessment process:
  - i. Biological agents and toxins
  - ii. Irritants
  - iii. Nerve agents
  - iv. Vesicants
- ll. Given the local emergency response plan and/or the organization's standard operating procedures, identify which agency will perform the following:
  - i. Implement on-site accountability
  - ii. Provide on-site responder identification
  - iii. Provide command post security
  - iv. Provide crime scene investigation
  - v. Provide evidence collection and sampling

#### ***IV.A.5 EPA Sampling***

##### **Air Monitoring Course Objectives**

- a. Properly describe and use the following types of air monitoring and sampling equipment:
  - i. Combustible gas indicator
  - ii. Oxygen monitors
  - iii. Detector tubes

- iv Toxic gas monitors
- v Photoionization detectors
- vi Flame ionization detectors
- vii Gas chromatographs
- viii Sampling pumps and collection media
- ix Direct-reading aerosol monitors
- b. Identify the operational parameters, limitations, and data interpretation requirements for the instruments listed above.
- c. Identify the factors to be considered in the development of air monitoring and sampling plans.
- d. Discuss the use of air monitoring data for the establishment of personnel and operation health and safety requirements.
- e. List the six objectives of air monitoring specified by the EPA Standard Operating Safety Guides.
- f. Identify the OSHA and EPA standards that cover hazardous waste site operations and emergency response.
- g. Identify the five hazardous conditions that 29 CFR 1910.120 requires to be checked during initial site entry.
- h. State when periodic monitoring and personnel monitoring are required by 29 CFR 1910.120
- i. List three air-monitoring actions that 29 CFR 1910.120 requires in the site safety and health plan.
- j. Given 29 CFR 1910.120(q), state the three air monitoring requirements for the individual in charge of the Incident Command System (ICS).
- k. Given 29 CFR 1910.120(q), state the air-monitoring training requirements for the hazardous materials technician and the hazardous materials specialist.
- l. State the NSF SOP for all Action levels and exposure limits.
- m. List four differences between direct-reading instruments and air sample collection.
- n. List three sources of air sampling and analysis methods developed by U. S. Government agencies.
- o. Define the different particle size terms and describe methods of collecting different particle sizes.
- p. Describe the following types of sampling devices, as well their uses and any special considerations.
  - vii Solid sorbents
  - viii Liquid sorbents
  - ix Gas bags
  - x Canisters
  - xi Combination media
  - xii Passive dosimeters
- q. Define gas chromatography and describe its uses and limitations.
- r. Identify a gas chromatograph (CG) and describe its components.
- s. List three types of field applications of portable CG's.
- t. Identify the two major dispersion modeling applications and the two dispersion modeling classes.
- u. Identify the components of dispersion modeling during an emergency removal process.
- v. Identify the six major meteorological data needs.
- w. Give an example of the following:
  - v Contingency model
  - vi Accidental release model
  - vii Short term site assessment dispersion model
  - viii Long term site assessment dispersion model
- x. Demonstrate an air dispersion computer model (Cameo, Aloha, Marplot).

**Hazardous Material Sampling Course Objectives:**

- a. Identify, show competency and state the use of the following:
  - i Bacon bomb
  - ii Auger kits
  - iii Grab sampler/Clam shell
  - iv Calawasa tubes
  - v Drum thieves
  - vi Alpha bottle
  - vii Soil gas prob
  - viii Sludge judge
  - ix Siphon pumps
- b. Select the appropriate field screening method for a given contaminant and geologic environment.
- c. Select the appropriate sampling container and sample preservation method based on the sample media and analysis required.
- d. Select the appropriate sampling implements and methods for sampling various containerized wastes.
- e. Select the appropriate tools and methods for sampling surface water and sediments.
- f. Describe the basic methods of soil sampling in the unsaturated zone.
- g. Demonstrate the proper method for obtaining a groundwater sample from a monitoring well.
- h. Complete the required documentation, including chain of custody and sample labels, for shipment of environmental samples to an analytical laboratory
- i. Complete the fundamental tasks in a sampling event from initial site investigation through field data collection.

**IV.A.6 Oil Spill Response Course****Oil Spill Response in Ports and Waterways - Texas A&M National Spill**

**Control School** The cost of this 5-day course is \$695.00 per government student. POC for this course is Dr. Barnes at the National Spill Control School: 361.825.3333

The course is designed to improve the level of skill related to oil spill response. This course is designed to serve a two-fold purpose: to provide field training in oil spill response techniques and to satisfy regulatory requirements for safety training of emergency responders. The training revolves around hands-on field exercises in boat handling, boom deployment and recovery, and pump and skimmer operations. Course objectives include classroom discussion and field demonstration of response techniques and equipment, environmental hazards, and personal safety hazards.

**Course Objectives**

- m. Discuss Oil Spill Response techniques and strategies
- n. Review MSDS's- Petroleum Hydrocarbons
- o. Discuss Heat Stress and Hypothermia
- p. Identify levels of PPE during spill responses
- q. Perform Decon of Personnel and Equipment
- r. Practice Boat Handling and Water Safety
- s. Identify various parts of Booms
- t. Demonstrate Boom deployment and recovery
- u. Discuss and Identify Pump and Skimmer Operations and Shoreline Recovery Systems



- v. Demonstrate Booming a vessel
- w. Demonstrate Booming in currents
- x. Demonstrate Corraling, Cascading and Chevron Booming

#### ***IV.A.7 EPA Health & Safety for Decision Makers 165.8***

*PLACEHOLDER FOR COURSE OBJECTIVES*

#### ***IV.A.8 Unit RCRA Course***

- h. Identify regulatory requirements for generators of Hazardous Waste.
  - ii. Define Resource Conservation and Recovery Act
  - iii. Identify some generators of Haz Waste
  - iiii. List requirements for Haz Waste generators.
  - ivi. State the requirements and fill out a Haz Waste Manifest
- i. Define Haz Waste and its characteristics.
  - ii. Find the listing of Haz Waste in 49 CFR.
- j. State the requirements for storage of Haz Waste as they pertain to the following:
  - ii. Labeling
  - iii. Proper contents
  - iiii. Storage of Haz Waste
  - ivi. Chemical compatibilities.
  - vi. Chemical Incompatibilities.
- k. State requirements for the following other types of Haz Waste
  - ii. Biohazard Waste
  - iii. Mixed waste.
  - iiii. Polychlorinated Biphenyls (PCB's)
  - ivi. Waste oils and Lubricants.
- l. State requirements associated with Haz Waste emergencies and spill response.
  - ii. Preventing for emergency and preventing accidents.
  - iii. Emergency Coordinator Responsibilities.
  - iiii. Requirements for emergencies.
  - ivi. Emergency Planning requirements specific to large quantity generators.
- m. Identify requirements associated with shipping haz waste from your facility.
  - ii. Choosing a Haz Waste transporter and designated waste management facility
  - iii. Preparing your Haz Waste for shipment.
  - iiii. The uniform Haz Waste manifest.
  - ivi. Land disposal restriction notice.
  - vi. Biennial reports.
- n. State requirements associated with used oil and oil waste.
  - ii. What is used oil.
  - iii. Types of used oil.
  - iiii. Used oil generators.
  - ivi. What must used oil generators do when managing used oil.
  - vi. Burning used oil from other generators.
  - vii. What about PCB's.
  - viii. Recycling and pollution prevention opportunities.

#### ***IV.A.9 Incident Response Planning Workshop***

*PLACEHOLDER FOR COURSE OBJECTIVES*

**IV.A.10 I-300 / Division-Group Supervisor**

PLACEHOLDER FOR COURSE OBJECTIVES

**IV.A.11 S-420 Command & General Staff - optional**

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**IV.A.12 EPA OSC course – optional**

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**IV.A.13 PIAT Public Affairs Course**

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**IV.A.14 OSLTF FFARM**

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**IV.A.15 IIPO** (correspondence course)

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**IV.A.16 DC Vessel Damage Assessment** (correspondence course)

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**IV.A.17 FEMA RAD** (online course at <http://training.fema.gov/emiweb/is3.htm> )

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**IV.A.18 FEMA / NFPA Emergency Response to Terrorism** (correspondence course)

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**IV.A.19 FEMA Professionals in Emergency Management** (correspondence course)

PLACEHOLDER FOR COURSE OBJECTIVES

**IV.B SATISFACTORILY DEVELOP & SUBMIT THE FOLLOWING PLANS****IV.B.1 Site Safety Plan**

IAW NSF SOP & 29 CFR 1910.120(b)(4)

#### ***IV.B.2 Sampling Plan***

Comprehensive plan for hazardous categorization and hazardous waste profiling

#### ***IV.B.3 Air Monitoring / Surveillance program***

Given a hazardous scenario with several known substances; include types of sampling, types of instruments/monitors, frequency and location of use; be sure to consider all logistics, staffing and safety

#### ***IV.B.4 Lightering Plan***

IAW NSF SOP

#### ***IV.B.5 IAP***

IAW NIIMS ICS

## References

### A

#### ***Admin / Finance***

- a. NPFC User Reference Guide Book
- b. Federal Acquisition Regulations, Part 13
- c. Standard BOA from MLC
- d. NPFCINST 16451.2 Resource Documentation and Cost Documentation Technical Operating Procedures
- e. G-ECIII-3 Memo dated May 25, 1993
- f. Joint Federal Travel Regulations Vol. I
- g. COMDTINST M4610.5 Transportation of Freight
- h. FOSC Finance and Resource Management Field Guide (FFARM)

#### ***Aerial Observation***

- a. AN APPROACH TO OBSERVING OIL AT SEA, 1983, R. Pavia and D.L. Payton
- b. AERIAL OBSERVATION OF OIL AT SEA, 1981, ITOPF technical information paper #1
- c. CGAIRSTA CAPE COD AIREYE FAMILIARIZATION BRIEF, ATC J. W. Sermersheim
- d. Shoreline Assessment Guide
- e. NOAA Open Water Oil Identification Job Aid for Aerial Observation

#### ***Aircraft Loading***

- a. CGTO 1C-130-1, C130 Flight Manual
- b. COMDTINST M3710.1C, Coast Guard Air Operations Manual
- c. TO 1C-130A-9, C130 Cargo Loading Manual
- d. USAF SERIES TO 1C-130A-95-1 Cargo Loading Manual
- e. TO 1-1b-50 Basic Technical Order for Aircraft Weight and Balance
- f. MAC Pamphlet 50-13 MAC Affiliation Training Program Airlift Planners Course
- g. Air Force Joint Manual (AFJMAN) 24-204 dated 1997
- h. International Air Transport Association (IATA) Dangerous Goods Regulations (current year edition)
- i. NSF SOP

#### ***Air Monitoring / Surveillance***

- a. NIOSH Publication No. 85-115 (occupational safety and health guidance manual for hazardous waste site activities)
- b. NSF Chemical SOP
- c. EPA Air Monitoring for Hazardous Materials Course Book
- d. EPA Standard Operating Guide
- e. COMDTINST M16465.30 Policy Guidance for Response to Hazardous chemical Releases

## B

### ***Bioremediation***

- a. BIOREMEDIATION FOR MARINE OIL SPILLS, Summer 1991, US Congress, Office of Technology Assessment

### ***Boom Mooring System***

- a. USCG Prepositioned Response Equipment Maintenance Manual
- b. Inflatable Containment Boom, storage/deployment reel and diesel power pack operations manual

### ***Booming***

- a. Texas A&M Oil Spill Control Course Notebook, Containment of Oil on Water chapter(s)
- b. World Oil Spill Catalog, Chapter 1
- c. Exxon's Oil Spill Response Field Manual, chapters 5 and 6
- d. NSF SOP
- e. NSF Equipment Manual

## C

### ***Canflex FCB-100 Seaslug***

- a. NSF Equipment Manual
- b. Navigation Rules COMDTINST M16672.2B
- c. USCG Prepositioned Oil Recovery Equipment Preventive Maintenance Manual
- d. Canflex FCB-100 Sea Slug Manual

### ***CERCLA and OPA 90: NCP, RCP, ACP***

- a. National Contingency Plan, 40 CFR 300
- b. Oil Pollution Act of 1990
- c. PUBLIC LAW 101-380 – Aug 18, 1990 (OPA 90)
- d. 42 USCG 9675 (CERCLA LAW)

### ***Chemical Countermeasures***

- a. National Contingency Plan, 40 CFR 300
- b. Chemical Oil Spill Treating Agents, Technical Report Series 93-015, MSRC (R&D) Washington, DC 2005
- c. RESPONSE TO MARINE OIL SPILLS, 1987, ITOPF Ltd., Witherby and Company, London ECI
- d. USING OIL SPILL DISPERSANTS ON THE SEA, 1989 National Research Council, National Academy Press Washington, DC
- e. SMART Dispersant Module

### ***Communications Equipment***

- a. Motorola Saber II/III Handie-Talkie Portable Radios Operating Instructions
- b. Motorola Base Station Manual
- c. Motorola Spectra Conventional Radio System Operating Manual
- d. Telecommunications Handbook COMDTINST 2300.7
- e. Saber Portable Radios Radio Service Software Users Guide
- f. Motorola Repeater Interface Communications Kit Operators Manual
- g. USCG Portable Radio Repeater System Set-up and Operations
- h. Motorola IIIISAR Portable Radio Operating Instructions Manual for Conventional Models (SCBA Radios)
- i. Voice Vector Operating and Maintenance Instructions (SCBA use)
- j. Mobile Telesystems Inc. TCS-9200 Operation Manual (INMARSAT)
- k. STN Atlas Elektronik SP 2000 P Global Personal Telephone User's Manual (INMARSAT)
- l. Spectra Mobile Radios, Radio Service Software Users Guide
- m. Motorola GM300 Software Users Guide
- n. Spectra Desktop Base/Control Stations Instructions Manual (MICP)
- o. MRTI 1000 Micro-Processor Radio-Telephone Interconnect (MICP)
- p. Radio Frequency Plan COMDTINST M2400.1F
- q. NSF SOP
- r. NSF Equipment Manual

### ***Confined Space Entry***

- a. 29 CFR 1910.146 Confined Spaces
- b. COMDTINST M16000.6 Marine Safety Manual Volume I
- c. NSF Chemical Standard Operating Procedures
- d. COMDTINST M5100.48 Confined Space Entry Manual
- e. Naval Ship's Technical Manual, Chapter 074, Vol 3
- f. NIOSH Criteria for a Recommended Standard, Working in Confined Spaces

## **D**

### ***Damming / Diking / Diverting***

- a. Inland Waters Oil Spill Response Course Manual, DOWCAR
- b. Exxon Oil Spill Response Field Manual

### ***Data Ram***

- a. Data Ram operators manual

### ***Decontamination Procedures***

- a. NIOSH Pub No 85-115 (occupational safety and health guidance manual for hazardous waste site activities)
- b. EPA Standard Operating Safety Guides

### ***Direct Reading Instruments***

- a. HMIRO Manual (EPA)
- b. Radiac Operators Manual
- c. Pyrometer Operators Manual
- d. PH Meter Operators Manual

- e. PH Paper Instructions
- f. PCB Test Kit Instructions
- g. Draeger Tube Manual
- h. Weather Tube Instructions (tube specific)
- i. Weather Station Operators Manual
- j. EPA Radiation Safety Survey at Superfund Sites
- k. TIIIA-1000 Operators Manual
- l. PHD Ultra Operators Manual
- m. Data Ram Operators Manual
- n. SKC Pump Users Manual
- o. Dosimeter Instruction Sheet

### ***Draeger CMS***

### ***Draeger Pump and Tubes***

- a. Draeger tube manual

## **E**

## **F**

### ***Fast Sweep Boom***

- a. USCG Fast Sweep Systems Operations Manual includes:  
storage/deployment reel and diesel power pack

### ***First Aid / CPR***

### ***Foam Filled Boom***

- a. Technical Manual for Foam Filled Open Water Oil Containment Boom

## **G**

## **H**

### ***HAZCAT Kit***

- a. HazCat Kit Chemical Identification System

### ***HAZMAT Chemistry***

- a. HAWLEY'S CONDENSED CHEMICAL DICTIONARY, 11<sup>TH</sup> ED, 1987, N. Irving Sax and Richard J. Lewis, Sr., Editors, Van Nostrand Reinhold, NY

- b. THE COMMON SENSE APPROACH TO HAZARDOUS MATERIALS, 1986  
Frank L. Fire, Fire Engineering
- c. RECOGNIZING AND IDENTIFYING HAZARDOUS MATERIALS, 1985,  
National Fire Academy
- d. EPA's Hazardous Materials Incident Response Operations (HMIRO)
- e. EPA's treatment technologies for superfund sites
- f. Marine Safety Manual, Marine Environmental Protection, COMDTINST  
M16000.14
- g. ASTINST M6260.1 Respiratory Protection Program Manual
- h. NIOSH Pocket Guide to Chemical Hazards, 1990
- i. EPA's Air Monitoring for Hazardous Materials
- j. Fire Chem I & II, Ron Edwards, Safe Film Inc
- k. US DOT Emergency Response Guidebook (current year)

## I

### ***Incident Command System***

- a. USCG Incident Management Handbook
- b. FFARM
- c. ICS position specific Job Aids

### ***Inflatable Boom***

- a. NSF Equipment Manual
- b. USCG Inflatable Containment Boom, storage/deployment reel and diesel  
power pack operations manual

### ***Infrared Camera***

### ***In-Situ Burning***

- a. Questions about In-Situ Burning as an Open-Water Oil Spill Response  
Technique, G. Shigenaka NOAA/Hazmat
- b. SMART ISB Module Joint Agency Guide

## J

## K

## L

### ***Lancer Inflatable Barge B-100***

- a. NSF Equipment Manual
- b. Navigation Rules COMDTINST M16672.2B
- c. B-100 Operating Manual Lancer Oil Recovery Barge



- d. B-100 Maintenance Manual Lancer Oil Recovery Barge
- e. Operating and Maintenance Instructions Lancer Inflator L150
- f. USCG Prepositioned Oil Recovery Equipment Preventive Maintenance Manual

### ***Lightering***

- a. 33 CFR Subchapter O - pollution
- b. US Navy Salvage Manual Vol. 5 (Pol Offloading)
- c. 46 CFR Subchapter D – tank Vessels
- d. 46 CFR Subchapter N – certain bulk dangerous cargoes
- e. International Chamber of Shipping, Ship to Ship Transfer Guide
- f. NSF INST 16480.2 Lightering Pumping and Damage Assessment
- g. 46 CFR, Subchapter O – Bulk Dangerous Cargoes
- h. NSF SOP

## **M**

### ***Mechanical Recovery***

- a. Texas A&M Oil Spill Control Course Manual
- b. World Catalog of Oil Spill Products
- c. Exxon's Oil Spill Response Field Manual
- d. GENWEST Mechanical Calculator Course
- e. NSF SOP
- f. NSF Equipment Manual

### ***Medical Monitoring***

- a. 29 CFR 1910.120(f) medical surveillance
- b. NSF Chemical SOP
- c. NIOSH Pub 85-115 (occupational safety and health guidance manual for hazardous waste site activities); chapter 5, medical program
- d. ACGIH TLIII Guidebook

### ***MICP / AUX Equipment***

- a. Mobile Incident Command Post (MICP) Checklists
- b. Mobile Incident Command Post (MICP) Setup and Tear Down Procedures
- c. Owner's / Operator's Manual for unit's generator sets
- d. Owner's / Operator's Manual for Flood Lights/Lighting Pallets

## **N**

### ***Non-Submersible Pumps***

- a. NSF Equipment Manual
- b. Peristaltic Hose Pump Series M Manual
- c. Yanmar 1. L-A, Operation Manual
- d. Installation and Operation manual for QP-301TY
- e. Multiquip Engine Driven SelfPriming Pump

- f. Shop Manual Honda WA20X/WA30X
- g. US Navy Salvor's Handbook, Chapter 5-4 Dewatering
- h. Chemical Resistance of Common Elastomers from National Master-Pump (peristaltic)
- i. NSF SOP
- j. Ship to Ship Transfer Guide
- k. Wilden M1/M8/M15 Directions for Installation & Maintenance

### ***NSF Organization***

- a. NSF Organization Manual
- b. NSF SOP
- c. National Contingency Plan 40 CFR 300
- d. Marine Safety Manual, Vol IV

## **O**

## **P**

### ***PCB Test Kit***

- a. PCB test kit instructions

### ***PHD Ultra***

- a. HMIRO Manual (EPA)
- b. PHD Ultra Operators Manual

### ***PH Paper***

- a. PH paper instruction sheet

### ***Plugging and Patching***

- a. NSF Equipment Manual
- b. Naval Ships Technical Manual, Chapter 079, Vol. 2
- c. US Navy Salvors Handbook Chlorine Institute Emergency Kits A, B, C Instruction Manual
- d. Vettors Systems, Inc. Instruction Manual

### ***Prime Movers and Hydraulic Systems***

- a. Naval Engineering Manual COMDTINST M9000.6C
- b. NSF Equipment Manual
- c. Technical Manual Operations and Maintenance Instructions USCG (Deutz prime mover)
- d. USCG Inflatable Containment Boom, Storage/Deployment Reel and Diesel Power pack Operations Manual
- e. USCG Fast Sweep System Operations Manual includes: storage/deployment reel and diesel power pack

- f. USCG High Volume Pumping Unit (HIIIPU) Model 82647 description, operations, maintenance, troubleshooting, parts listing
- g. USCG Prepositioned Oil Recovery Equipment Preventive Maintenance Manual

### ***Protective Clothing / Levels of Entry***

- a. 29 CFR 1910 Subpart G, H, I
- b. 29 CFR 1910.120
- c. NIOSH Publication 85-115 (Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities)
- d. Quick Selection Guide for Protective Clothing
- e. NSF SOP

### ***Pyrometer***

- a. Pyrometer operators manual

## **Q**

## **R**

### ***Radiation Survey Instruments***

- a. Radiac operators manual

### ***Reference Resource Library***

- a. Farm Chemicals Handbook
- b. GATX Tank Car Manual
- c. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, N. Irving Sax, Richard J. Lewis, Van Nostrand Reinhold
- d. Chemical Hazards Response Information System, COMDTINST M16465.12B
- e. NIOSH Pocket Guide to Chemical Hazards
- f. Emergency Response Guidebook, US DOT
- g. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists
- h. Quick Selection Guide to Chemical Protective Clothing, K. Forsberg, S. Mansdord, Van Nostrand Reinhold
- i. TOMESPlus users manual, Micromedex, Inc
- j. CHEMTOX users manuals, Resource Consultants, Inc
- k. CAMEO/ALOHA user manuals, National Safety Council
- l. Guide to Safe Handling of Compressed Gases, Matheson Gas Products, Secaucus, NJ

### ***Resource Documentation***

- a. COMDTINST 7310.1 (series) USCG Standard Rates

- b. USEPA Removal Cost Management System (RCMS 4.2) Site Summary User's Guide
- c. NPFCINST 16451.2 Resource Documentation and Cost Documentation Technical Operating Procedures
- d. FFARM

### ***Respiratory Protection***

- a. NSF Equipment Manual
- b. NIOSH Publication No. 85-115 (Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities)
- c. NIOSH: Guide to Industrial Respiratory Protection
- d. COMDTINST M6260.2B (Technical Guide: Practices for Respiratory Protection)
- e. 29 CFR 1910.134
- f. NSF Chemical Standard Operating Procedures
- g. NSF Field Guide Book
- h. ASTINST M6260.1 Respiratory Protection Program Manual
- i. 30 CFR 11

### ***Rigging***

- a. USCG Boat Crew Seamanship, COMDTINST M16114.5
- b. Manufacturer's Manual for Griphoist, Chapter 1
- c. Manufacturer's Manual for Tripods
- d. Manufacturer's Manual for Lugalls
- e. Manufacturer's Hoist Safety and You, Lugall Corp
- f. Multiservice Helicopter External Air Transport: Basic Operations and Equipment COMDTINST M13482.2
- g. Manufacturer's Manual for Super Pull-All
- h. US Navy Salvors Handbook, Ch. 3 Rigging, Ch 4.6 Beach Gear
- i. NALLSHIPS Technical Manual, Ch. 581 Anchoring, Ch 613 Rope and Rigging
- j. Samson Rope Manual

## **S**

### ***Sampling***

- a. COMPARISON OF EPA'S SAMPLING AND ANALYSIS METHODS, Lawrence H. Keith, Lewis Publishing Inc.
- b. NSF Equipment Manual
- c. EPA/540/P-91/008 Compendium of ERT Waste Sampling Procedures
- d. Spill Sample Handling and Transmittal Guide, 5<sup>th</sup> Ed., USCG Marine Safety Lab

### ***Salvage***

- a. US Navy Ship Salvage Manual Vol. 1 (stranding)
- b. US Navy Salvors Handbook
- c. Naval Ships Tech Manual, Chapter 079 Practical Damage Control Vol. 2, Stability and Buoyancy Vol. 1
- d. Towing, Tugboats and Salvage: Cornell Maritime

- e. NAIHSEA Tech Manuals, Damage Control, Stability and Buoyancy

### ***Screw-Augur Weir Skimmers***

- a. Operators Manual DESMI Vertical Archimedes Screw Weir Skimmer System
- b. USCG VOSS Operations Manual

### ***Shoreline Assessment / Cleanup***

- a. NOAA Shoreline Countermeasures Manual
- b. Response to Marine Oil Spill (International Tanker Owners Pollution Federation LTD)

### ***Site Safety***

- a. NIOSH Publication No. 85-115 (Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities)
- b. Unit's SOP (collateral duties)
- c. 29 CFR 1910.120
- d. 29 CFR 1926 Labor
- e. 29 CFR 1910 Labor
- f. Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities, No. 85-115
- g. ACGIH TLV Guidebook
- h. NSF SOP

### ***Small Boats***

- a. COMDTINST M16114.5A Boat Crew Seamanship Manual
- b. COMDTINST M16114.10 Boat Crew Qualification Guide
- c. COMDTINST M5312.15A Boat Crew Utilization Guideline

### ***Submersible Pumps***

- a. NSF Equipment Manual
- b. Technical Manual Operations and Maintenance Instructions, submersible chemical / petroleum pumping system: section 4
- c. Kaverner Eureka CCN-150-5C Operations and Maintenance Technical Manual 1992
- d. Kaverner Eureka Chemical Chart CCN-150-5C ltr dated 04May95
- e. USCG Prepositioned Oil Recovery Equipment Preventive Maintenance Manual
- f. US Navy Ship Salvage Manual Vol 5 (POL Off-Loading) 1991
- g. NSF Standard Operating Procedures Section E
- h. International Chamber of Shipping Oil Companies
- i. International Marine Forum Ship to Ship Transfer Guide
- j. AEROQUIP Manual

## **T**

### ***Travel & Transportation***

- a. Joint Federal Travel Regulations, Vol. I
- b. COMDTINST M4610.5 Transportation of Freight
- c. NSF SOP

### ***TVA-1000***

- a. HMIRO Manual (EPA)
- b. TVA-1000 operators manual

## **U**

## **V**

### ***Vessel Damage Assessment***

- a. NSF Equipment Manual
- b. US Navy Salvage Manual Vol. 1 (stranding)
- c. Operating and Maintenance Instructions Oil/Water Interface Meter Model D-2401-2 Flexi Dip Configuration
- d. US Navy Salvage Manual Vol. 5
- e. NSF INST 16480.2 Lightering Pumping and Damage Assessment
- f. Vessel Design and Nomenclature (RESTRACEN Manual)
- g. 49 CFR Sub Chapters 172 and 176
- h. NFPA 306 – standard for the control of gas hazards on Vessels
- i. US Navy Salvors Handbook
- j. NSF SOP

### ***Vessel of Opportunity Skimming System***

- a. USCG VOSS Manual (G-ECV)
- b. USCG VOSS Operating and Maintenance Manual
- c. USCG Fast Sweep Systems Operation Manual
- d. NSF SOP
- e. NSF Equipment Manual

### ***Viscous Oil Pumping System (VOPS)***

- a. NSF SOP
- b. NSF Equipment Manual

## **W**

### ***WBGT – Heat Stress Monitor***

### ***Weather Stations***

- a. SKC pump user's manual

**X**

**Y**

**Z**

# NSF Qualification Exercise Evaluation Worksheet

(Marks & justifying comments required for all areas)

EXERCISE :

DATE :

	✓ YES	✓ NEED IMPROVEMENT	COMMENTS
<b>Safety:</b> All safety protocols briefed and enforced.	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IAW SOP:</b> Followed NSF SOPs and other appropriate protocols (IE Manuals, entry standards, CFRs, etc).	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Team Work:</b> Worked effectively as a team member, demonstrated both Leadership & Followership skills.	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Use of Resources:</b> Used appropriate tools and personnel efficiently.	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Communication:</b> Clearly communicated information in a timely and effective manner, including hot wash and lessons learned.	<input type="checkbox"/>	<input type="checkbox"/>	
<b>General Lessons Learned:</b>			

**Required Signatures (print & sign)**

Evaluator (break-in RS):

Evaluator (break-in RT):

VERIFYING Official (RS/RO):

Training Officer: